

SUMMER FLOUNDER COMMERCIAL ISSUES AND
GOALS AND OBJECTIVES AMENDMENT
TO THE SUMMER FLOUNDER, SCUP, AND BLACK SEA BASS
FISHERY MANAGEMENT PLAN

Draft Environmental Impact Statement

DRAFT AS OF 6/4/18



Prepared by the Mid-Atlantic Fishery Management Council in cooperation with the Atlantic States Marine Fisheries Commission and the National Marine Fisheries Service (NMFS)

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ABSTRACT

The Mid-Atlantic Fishery Management Council and the Atlantic States Marine Fisheries Commission, in consultation with NOAA's National Marine Fisheries Service, proposes to adopt and implement a Commercial Issues Amendment¹ to the Summer Flounder, Scup, and Black Sea Bass Fishery Management Plan (FMP) pursuant to the Magnuson-Stevens Fishery Conservation and Management Act (MSA). This Draft Environmental Impact Statement (DEIS) presents a range of alternatives under consideration in this amendment, which address the amendment purposes outlined in the document. The proposed alternatives are applicable only to the commercial summer flounder fishery, and are focused on measures related to federal commercial moratorium permit qualification criteria for summer flounder, allocation of summer flounder commercial quota, and the list of framework provisions within the FMP. In addition to these alternatives, this document also describes proposed changes to the FMP objectives for summer flounder (applicable to both the recreational and commercial summer flounder fisheries). This document also includes a detailed description of the affected environment and valued ecosystem components, and analyses of the impacts of the measures under consideration on the affected environment. It addresses the requirements of the National Environmental Policy Act (NEPA), the MSA, the Regulatory Flexibility Act (RFA), and other applicable laws.

1.0 EXECUTIVE SUMMARY

The summer flounder, scup and black sea bass fisheries are managed under the Summer Flounder (*Paralichthys dentatus*), Scup (*Stenotomus chrysops*) and Black Sea Bass (*Centropristis striata*) FMP developed cooperatively by the Mid-Atlantic Fishery Management Council (Council) and the Atlantic States Marine Fisheries Commission (Commission).

This amendment to the Summer Flounder, Scup and Black Sea Bass FMP is applicable only to the summer flounder fisheries and could: 1) implement requalifying criteria for federal commercial moratorium permits, 2) modify the allocation of commercial summer flounder quota, and 3) add framework provisions to the FMP that would allow for commercial landings flexibility policies for summer flounder to be developed through later framework actions.

This document includes the draft amendment as well as its Draft Environmental Impact Statement (DEIS). This document provides the background and context for the amendment (sections 4.0 and 6.0), describes in detail all of the management alternatives under consideration in the amendment (section 5.0), evaluates the potential impacts of the management alternatives under consideration (section 7.0), addresses the alternatives under consideration with respect to the MSA and other applicable laws (sections 8.0 and 9.0), and provides the public and the Council and Commission with adequate information about the measures and their impacts to ultimately inform decision-making following the public comment period.

In this executive summary, the purpose of the action is described in section 1.1, a summary of the alternatives is presented in section 1.2, and a brief overview of the impacts of these alternatives is described in section 1.3.

¹ Amendment number to be added after final action.

1.1 PURPOSE OF THE ACTION

The purpose of this action is to consider modifications to the FMP that would impact the **commercial summer flounder fishery as well as the existing FMP objectives for summer flounder**. The three specific purposes associated with the three alternative sets in this action are described in detail in section 4.1 of this document, and briefly summarized here:

1. ***Consider implementing requalifying criteria for federal commercial moratorium permits:*** Federal permit qualification criteria have not changed since establishment in 1993. Stakeholders believe lenient original qualifications criteria resulted in more permits than the fishery could profitably support in the long term. Recent lower quotas and concerns about inactive vessels re-entering the fishery led to a perceived need to adjust fleet size to more closely reflect current stock and fishery conditions. The purpose of alternative set 1 is to consider whether a reduction in the number of commercial moratorium permits for summer flounder is appropriate, and if so, how qualifying criteria should be revised.
2. ***Consider modifications to commercial quota allocation:*** Current commercial allocation was last modified in 1993 and is perceived by many as outdated given its basis in 1980-1989 landings data. Summer flounder distribution, biomass, and fishing effort have changed since then, and some believe initial allocations may not have been equitable or were based on flawed data; therefore, stakeholders requested evaluation of alternative allocation systems. The purpose of alternative set 2 is to consider whether modifications to the commercial quota allocation are appropriate, and if so, how the quota should be re-allocated.
3. ***Consider adding commercial landings flexibility as a frameworkable issue in the Council's FMP:*** Landings flexibility policies would give commercial vessels greater freedom to land or possess summer flounder in the state(s) of their choice. Although such policies may be more effectively developed by state level agreements, the Council and Board are interested in having the option to pursue these policies via framework action/addenda in the future if necessary. This action **does not** consider implementing landings flexibility policies at this time but **does** consider adding landings flexibility policies as a frameworkable item in the Council's FMP, which would allow a future landings flexibility action to be completed through a framework action instead of a full amendment. The Board likely already has the ability to implement these policies via an addendum to the Commission's FMP, and thus this alternative set is applicable only to the Council's FMP. The purpose of alternative set 3 is to consider adding landings flexibility policies to the list of management measures in the Council's FMP that could be modified via framework action.

In addition, ***this action proposes revisions to the FMP objectives for summer flounder***, although these revisions are not proposed as an explicit alternative set in this amendment. These proposed revisions are described in section 4.2.

1.2 SUMMARY OF ALTERNATIVES CONSIDERED

1.2.1 Alternative Set 1: Federal Moratorium Permit Requalification

These alternatives consider revisions to the requalification criteria for federal summer flounder commercial moratorium permits. These alternatives are fully described in section 5.1.

Alternative 1A: No Action/Status Quo

Alternative 1A would make no changes to the current eligibility criteria for commercial moratorium permits for summer flounder. Summer flounder moratorium permits were established via Amendment 2

to the FMP (1993) and issued to the owner or operator of a vessel that landed and sold summer flounder in the management unit between January 26, 1985 and January 26, 1990, OR the vessel was under construction for, or was being re-rigged for, use in the directed fishery for summer flounder on January 26, 1990. Permit holders must renew their permit each year by the last day of the fishing year for which the permit is required, unless a Confirmation of Permit History (CPH) has been issued.² There are currently 940 existing moratorium rights for summer flounder.

Alternative 1B: Requalifying Criteria for Federal Commercial Moratorium Permits

Alternative 1B would impose requalification criteria on current federal summer flounder moratorium permits, including permits in CPH if they qualify. Permits not meeting the requalification criteria would be cancelled and could not be renewed. This alternative would **not** allow new entrants to qualify for a moratorium permit and has no impact on state level permits.

Alternative 1B has seven sub-alternatives with various combinations of qualification time periods and landings thresholds as described in Table 1. Each of the sub-alternatives uses the revised control date for the commercial summer flounder fishery of August 1, 2014, which was published on that date by NMFS at the request of the Council (79 FR 44737).

Table 1: Summary of federal permit requalification alternatives 1A and 1B (one of seven sub-alternatives must be selected if 1B is preferred). Landings thresholds refer to commercial landings of summer flounder associated with each individual moratorium right ID number.

Alternative	Time Period	Landings Threshold	#MRIs eliminated (%)
Alternative 1A (No Action/ <i>Status Quo</i>)	January 26, 1985 - January 26, 1990 (5 yrs)	At least 1 pound in any year over this time period	0 (0%)
Alternative 1B-1	August 1, 2009-July 31, 2014 (5 yrs)	≥1,000 pounds cumulative over this time period	516 (55%)
Alternative 1B-2	August 1, 2009-July 31, 2014 (5 yrs)	At least 1 pound in any year over this time period	448 (48%)
Alternative 1B-3	August 1, 2004-July 31, 2014 (10 yrs)	≥1,000 pounds cumulative over this time period	389 (41%)
Alternative 1B-4	August 1, 2004-July 31, 2014 (10 yrs)	At least 1 pound in any year over this time period	306 (33%)
Alternative 1B-5	August 1, 1999-July 31, 2014 (15 yrs)	≥1,000 pounds cumulative over this time period	295 (31%)
Alternative 1B-6	August 1, 1994-July 31, 2014 (20 yrs)	At least 1 pound in 20% of years in time period (i.e., in at least 4 years over this 20-year period)	271 (29%)
Alternative 1B-7	August 1, 1994-July 31, 2014 (20 yrs)	≥1,000 pounds cumulative over this time period	233 (25%)

² A CPH may be issued when a vessel that has been issued a limited access permit has sunk, been destroyed, or has been sold to another person without its permit history. Possession of a CPH will allow the permit holder to maintain landings history of the permit without owning a vessel.

1.2.2 Alternative Set 2: Commercial Quota Allocation

Alternative set 2 considers modifications to the allocation of commercial quota (currently allocated on a state-by-state basis). These alternatives are fully described in section 5.2.

Alternative 2A: No Action/Status Quo

This alternative would make no changes to the current state-specific commercial allocations, which were established via Amendment 2 to the FMP on the basis of 1980-1989 landings history (see section 5.2.1).

Alternative 2B: Adjust State Quotas Based on Recent Biomass Distribution

This alternative would modify state-by-state allocations based on a shift in relative exploitable biomass by region between 1980-1989 and 2007-2016, calculated using NEFSC trawl survey data for summer flounder above 14 inches length. The relative exploitable biomass and allocations are evaluated on a regional basis, with a Northern and Southern region split approximately at Hudson Canyon, meaning the states of New York and north and the states of New Jersey and south. The concept behind this alternative is taking the current state quotas, which are not based on biomass distribution but instead based on 1980-1989 landings by state, and adjusting them so that they have some basis in recent biomass distribution by region. There are two sub-options for calculating the change in relative exploitable biomass and applying this change to revised allocations; one of these options must be selected if the Council and Board choose alternative 2B. Both options would shift allocation from the Southern region (states of New Jersey through North Carolina) to the Northern region (states of New York through Maine).

- **Alternative 2B-1:** calculates the shift in regional exploitable biomass as a percent change relative to the Northern region starting biomass, and applies this as a percentage change to the combined Northern regional allocation. This results in a shift of 6% of the coastwide quota from the Southern region to the Northern region (see section 5.2.2.1).
- **Alternative 2B-2:** calculates the shift in regional exploitable biomass as an absolute shift relative to the coast and applies this as a 13% shift in regional allocation. This results in a shift of 13% of the coastwide quota from the Southern region to the Northern region (see section 5.2.2.2).

Alternative 2C: Revise State Allocations Above a Commercial Quota Trigger Point

This alternative would create state allocations that vary with overall stock abundance and resulting commercial quotas. For all years when the annual commercial quota is at or below a specified annual commercial quota trigger level, the state allocations would remain *status quo*. In years when the annual coastwide quota exceeded the specified trigger, the trigger amount would be distributed according to *status quo* allocations, and the additional quota beyond that trigger would be distributed by equal shares (with the exception of Maine, New Hampshire, and Delaware, which would split 1% of the additional quota). Alternative 2C has two sub-alternatives for different annual coastwide quota triggers; one of these options must be selected if the Council and Board choose alternative 2C.

- **Alternative 2C-1:** 8.40-million-pound trigger based on the recent five-year average of commercial quotas (2014-2018; see section 5.2.3.1)
- **Alternative 2C-2:** 10.71-million-pound trigger based on the recent ten-year average of commercial quotas (2009-2018; see section 5.2.3.2).

Under both sub-alternatives, the final state allocation percentages would vary in each year depending on the annual coastwide quota and how much "additional" quota is available to be distributed. In years where the quota was at or below the trigger, the allocation percentages would be *status quo* (equivalent to alternative 2A). A range of likely example allocations is described in section 5.2.3 and in Table 2 below.

Alternative 2D ("Scup Model" Quota System for Summer Flounder)

This alternative would allocate quota into three unequal seasonal periods, as is done for scup. During the two winter periods, January-April ("Winter I") and November-December ("Winter II"), a coastwide quota system would be implemented in conjunction with a system of coastwide possession limits and other measures. In a "Summer" period, May-October, a state-by-state quota system would be implemented by the Commission, and state-specific measures would be set to constrain landings to the summer state quotas. Alternative 2D has two sub-alternatives for either exempting or not exempting the state of Maryland; one of these options must be selected if the Council and Board choose alternative 2D.

- **Alternative 2D-1:** Exempt the state of Maryland from this management program due to their Individual Fishing Quota (IFQ) management for summer flounder; Maryland retains their current year-round allocation of 2.03910% of the coastwide quota (see section 5.2.4.1).
- **Alternative 2D-2:** Do not exempt Maryland; Maryland must participate in coastwide management during the Winter quota periods and state-specific management during the Summer period (see section 5.2.4.2).

A summary of the resulting allocations to each state under each of the alternatives above is provided in Table 2. Additional details on the configuration of each alternative is provided in section 5.0 of this document.

Table 2: Summary of allocation outcomes (percent allocated to each state) under alternative set 2. Alternative 2C provides a range under historic high and low quotas since future allocations would vary annually. Alternative 2D provides Summer period allocations only.

State	Alt 2A	Alt 2B-1	Alt 2B-2	Alt 2C-1 ^a		Alt 2C-2 ^a		Alt 2D-1	Alt 2D-2
				Under low quota (5.66 m. lb)	Under high quota (17.9 m. lb)	Under low quota (5.66 m. lb)	Under high quota (17.9 m. lb)		
ME	0.04756	0.05660	0.06661	0.04756	0.19923	0.04756	0.16235	0.015	0.015
NH	0.00046	0.00055	0.00064	0.00046	0.17712	0.00046	0.13417	0.000	0.000
MA	6.82046	8.11635	9.55238	6.82046	9.76840	6.82046	9.05159	19.332	18.525
RI	15.68298	18.66275	21.96477	15.68298	13.92735	15.68298	14.35424	22.476	21.538
CT	2.25708	2.68593	3.16115	2.25708	7.62693	2.25708	6.32121	3.566	3.417
NY	7.64699	9.09992	10.70998	7.64699	10.15627	7.64699	9.54612	18.553	17.779
NJ	16.72499	15.19806	13.50600	16.72499	14.41634	16.72499	14.97770	29.667	28.429
DE	0.01779	0.01617	0.01437	0.01779	0.18526	0.01779	0.14453	0.045	0.043
MD	2.03910	1.85294	1.64664	2.0391	7.52463	2.0391	6.19078	-- ^b	4.171
VA	21.31676	19.37062	17.21401	21.31676	16.57113	21.31676	17.72507	5.648	5.412
NC	27.44584	24.94014	22.16345	27.44584	19.44735	27.44584	21.39225	0.699	0.670

^a Allocation varies with annual quota; range provided covers historic commercial quotas, 1993-2018. Allocations may vary from this range if future coastwide quotas exceed historic high quota of 17.9 million lb. Annual quotas below the historic low would result in *status quo* allocations.

^b Under Alternative 2D-1, Maryland would be exempt from the scup model system and would have an annual allocation of 2.03910% of the coastwide quota (and thus no specific seasonal allocation for the summer period quota).

1.2.3 Alternative Set 3: Landings Flexibility Framework Provisions

This alternative set considers whether to add "landings flexibility" policies to the list of issues in the Council's FMP that can be modified through a framework action. Framework actions are modifications to the Council's FMP that are typically (though not always) more efficient than a full amendment. Framework actions can only modify existing measures and/or those that have been previously considered in an FMP amendment. Landings flexibility policies, depending on their configuration, may allow for commercial summer flounder vessels to land and/or possess summer flounder in states where they are not permitted at the state level.

Alternative 3A: No Action /Status Quo

This alternative would make no changes to the list of framework provisions in the Council's FMP, meaning that any future action to implement landings flexibility policies would likely have to be done through an amendment to the FMP. States would remain free to develop landings flexibility agreements through state-level agreements, provided that such agreements are consistent with other Council and Commission FMP requirements and would not require modification to the federal management measures.

Alternative 3B: Alternative 3B: Add Landings Flexibility as a Frameworkable Issue in the Council's FMP

This action would not implement any landings flexibility policies at this time, but instead would simply allow these policies to be implemented via a future framework action (for the Council; with corresponding addendum from the Commission) rather than through an amendment process. The impacts of any future framework action related to landings flexibility would be analyzed through a separate action, which would include public comment opportunities and documentation of compliance with all applicable laws. Depending on the proposed configuration of landings flexibility in a future action, the level of analysis required may vary and an Environmental Impact Statement (EIS) may be required if impacts are expected to be significant.

1.3 SUMMARY OF ENVIRONMENTAL IMPACTS

The environmental impacts of each alternative are described in section 7.0 of this DEIS. Environmental impacts are analyzed with respect to five valued ecosystem components (VECs):

1. The **managed resources**, including the managed species potentially affected by the measures under consideration (sections 7.1.1, 7.2.1, and 7.3.1);
2. **Non-target species**, including the primary species or species groups that interact with summer flounder, summer flounder habitat, and/or commercial summer flounder fishing gear (sections 7.1.2, 7.2.2, and 7.3.2);
3. The **physical environment and habitat**, including Essential Fish Habitat (EFH; sections 7.1.3, 7.2.3, and 7.3.3);
4. **Protected resources**, including Endangered Species Act (ESA)-listed and Marine Mammal Protection Act (MMPA)-protected large and small cetaceans, pinnipeds, sea turtles, fish, and critical habitat occurring in the affected area (sections 7.1.4, 7.2.4, and 7.3.4);

5. The **human environment**, including socioeconomic aspects of the fisheries (especially commercial fisheries) targeting summer flounder and the communities associated with those fisheries (sections 7.1.5, 7.2.5, and 7.3.5).

Impacts are described both in terms of their direction (negative, positive, or no impact) and their magnitude (slight, moderate, or high). In section 7.0, the alternatives are compared to the current condition of the VEC and also compared to each other. The recent conditions of the VECs include the biological conditions of the target stock, non-target stocks, and protected species over the most recent five years, as well as the characteristics of the commercial fishery and associated human communities over the same time frame. The guidelines used to determine impacts to each VEC is described in section 7.0 (see especially Table 48), and a summary is provided here:

- For **target and non-target species**, in general, alternatives which may result in overfishing or an overfished status may have negative biological impacts for those species, compared to the current condition of the VEC. Conversely, alternatives which may result in a decrease in fishing effort, resulting in ending overfishing or rebuilding to the biomass target, may result in positive impacts for those species by resulting in a decrease in fishing mortality.
- For the **physical environment and habitat**, alternatives that improve the quality or quantity of habitat or allow for recovery are expected to have positive impacts. Alternatives that degrade the quality or quantity, increase disturbance of habitat, or prevent the recovery of degraded habitats are expected to have negative impacts.
- For **protected species**, consideration is given to both ESA-listed species and MMPA-protected species. ESA-listed species include those at risk of extinction (endangered) or endangerment (threatened). Any action that results in interactions with or take of ESA-listed resources is expected to have negative impacts, including actions that reduce interactions. Actions expected to result in positive impacts on ESA-listed species include only those that contain specific measures to ensure no interactions with protected species (i.e., no take). By definition, all species listed under the ESA are in poor condition and any take has the potential to negatively impact that species' recovery. Under the MMPA, the stock condition of each protected species varies, but all are in need of protection. For marine mammal stocks/species that have their potential biological removal (PBR) level reached or exceeded, negative impacts would be expected from any alternative that has the potential to interact with these species or stocks. For species that are at more sustainable levels (i.e., PBR levels have not been exceeded), actions not expected to change fishing behavior or effort such that interaction risks increase relative to what has been in the fishery previously, may have positive impacts by maintaining takes below the PBR level and approaching the Zero Mortality Rate Goal.
- Impacts to **human communities** are considered primarily in relation to potential changes in landings and prices, and by extension, revenues, compared to the current fishery conditions. Alternatives which could lead to increased availability of target species and/or an increase in catch per unit effort (CPUE) could lead to increased landings for particular communities or for the fishery as a whole. Alternatives which could result in an increase in landings are generally considered to have positive socioeconomic impacts because they

could result in increased revenues (for fishing businesses as well as shoreside businesses); however, if an increase in landings leads to a decrease in price or a decrease in stock biomass for any of the landed species, then negative socioeconomic impacts could occur. In addition, socioeconomic impacts can be considered in terms of other economic metrics and effects on the social well-being of fishery participants and communities, including factors like effect on community resilience, jobs, and employee income.

A brief summary of the expected impacts of each alternative set is described below. Additional detail can be found in section 7.0 of this DEIS.

1.3.1 Impacts Summary for Alternative Set 1: Federal Moratorium Permit Requalification

Under alternative 1A and all sub-alternatives under 1B, overall annual summer flounder catch and landings will still be constrained by the annual catch limits and commercial quotas, which should remain the primary driving factor for overall fishery effort in a given year. While requalification of moratorium permits theoretically could result in a redistribution of effort among a different pool of vessels, the MRIs that would be eliminated under each sub-alternative of 1B are associated with little to no activity for summer flounder in recent years; therefore, the impacts of reducing permit capacity under alternative 1B may be minimal, as described in section 7.1. From August 2009 through July 2014, the summer flounder landings associated with all eliminated permits under alternative 1B range over the various sub-alternatives from 0 pounds to 181,302 pounds (for all eliminated permits combined over the entire time period). Relative to coastwide summer flounder landings, this represents a range of 0%-0.32% of the coastwide landings and 0%-0.28% of the coastwide revenue. Thus, the practical changes in the fishery resulting from any of the permit requalification alternatives are likely to be negligible, and the impacts of these alternatives would generally be to maintain the current condition of each VEC, as detailed in section 7.0 and summarized below.

Summer Flounder and Non-Target Species

Because overall fishery effort is not expected to be heavily influenced by these alternatives, and catch and landings will remain driven by annual limits, permit requalification alternatives in general are expected to contribute to an overall management strategy designed to prevent the stock from becoming overfished, leading to moderate positive overall impacts on the target resource for all federal permit requalification alternatives. Similarly, for non-target species, the permit requalification alternatives are not expected to result in changes in effort that would meaningfully impact the stock status of these species. All federal permit requalification alternatives under alternative set 1 would thus result similar moderate positive impacts to summer flounder and non-target species by maintaining their overall positive stock status.

Habitat

Overall fishery effort, and spatial patterns of fishing effort impacting habitat, are not expected to be altered by the alternatives related to federal permits. Fishing effort for summer flounder will continue in areas that have been fished by many gear types over many years. This continued effort impedes recovery of any degraded habitats within this footprint, leading to slight negative indirect impacts on habitat. All alternatives under alternative set 1 will have a similar magnitude of slight negative impacts to habitat.

Protected Resources

As described above, protected resources are evaluated with respect to both ESA-listed species and MMPA-protected species. None of the alternatives for permit requalification are expected to have substantial impacts on effort or interaction rates with protected resources, thus, they are expected to maintain the current status of each protected species. Because any action that results in interactions with or take of ESA-listed resources is expected to have negative impacts, the federal permit qualification alternatives described in this action would result in slight to moderate negative impacts to ESA-listed species by maintaining access to the fishery and resulting in continued interactions. For MMPA-protected species, the impacts of a proposed action vary by stock condition of each species. For marine mammal stocks/species that have their PBR level reached or exceeded, slight negative impacts would be expected from all permit requalification alternatives. For species that are at more sustainable levels (i.e., PBR levels have not been exceeded), actions not expected to change fishing behavior or effort such that interaction risks increase relative to what has been in the fishery previously, may have positive impacts by maintaining takes below the PBR level and approaching the Zero Mortality Rate Goal. Overall considering all protected resources, federal permit requalification alternatives are expected to result in slight negative to slight positive impacts to protected resources under all alternatives.

Human Communities

Socioeconomic impacts are possible resulting from modified access to the fishery at the vessel level, as described in section 7.1.5. Alternative 1A is likely to result in no changes no current socioeconomic conditions unless incentives change that cause latent effort to re-enter the fishery. In this case, alternative 1A may have slight negative impacts to some vessels if effort is spread between more participants, but will have slight positive impacts to low activity vessels that would otherwise be eliminated from the fishery. Alternative 1B, which would eliminate low or no activity permits to varying degrees under different sub-alternatives, would have impacts to remaining fishery participants ranging from no impacts to slight positive impacts, due to the prevention of latent effort from re-entering the fishery. On permit holders that are eliminated from the fishery, impacts would range from no impacts to moderate negative, depending on their current and planned activity for summer flounder.

Given the very small magnitude of recent summer flounder landings and revenues from eliminated permits under requalification alternatives, any of the socioeconomic impacts described above are likely to be small or negligible. However, there is some uncertainty associated with the socioeconomic impacts depending on the realistic potential for latent effort to re-enter the fishery, as described in section 7.1.

A summary of impacts to each VEC is provided in Table 3.

Table 3: Summary of impacts of Alternative Set 1: requalification of existing commercial moratorium permits. + = positive, - = negative.

Alt.	Description	Expected Impacts				
		<i>Summer flounder</i>	<i>Non-target species</i>	<i>Habitat</i>	<i>Protected Resources</i>	<i>Human communities^a</i>
1A	No action/ <i>status quo</i>	Moderate +	Moderate +	Indirect slight -	Slight - to slight +	No impact if conditions remain similar; slight - if incentives to re-enter fishery change; slight + to latent permit holders due to flexibility
1B-1	Requalify at $\geq 1,000$ pounds cumulatively over 8/1/09-7/31/14 (5 yrs)	Moderate +	Moderate +	Indirect slight -	Slight - to slight +	No impact to moderate - (for eliminated permit holders), no impact to slight + (for remaining permit holders)
1B-2	Requalify at ≥ 1 pound in any year from 8/1/09-7/31/14 (5 yrs)	Moderate +	Moderate +	Indirect slight -	Slight - to slight +	No impact to moderate - (for eliminated permit holders), no impact to slight + (for remaining permit holders)
1B-3	Requalify at $\geq 1,000$ pounds cumulatively over 8/1/04-7/31/14 (10 yrs)	Moderate +	Moderate +	Indirect slight -	Slight - to slight +	No impact to moderate - (for eliminated permit holders), no impact to slight + (for remaining permit holders)
1B-4	Requalify at ≥ 1 pound of summer flounder in any one year from 8/1/04-7/31/14 (10 yrs).	Moderate +	Moderate +	Indirect slight -	Slight - to slight +	No impact to moderate - (for eliminated permit holders), no impact to slight + (for remaining permit holders)
1B-5	Requalify at $\geq 1,000$ pounds cumulatively over 8/1/99-7/31/14 (15 yrs)	Moderate +	Moderate +	Indirect slight -	Slight - to slight +	No impact to moderate - (for eliminated permit holders), no impact to slight + (for remaining permit holders)
1B-6	Requalify at ≥ 1 lb in 20% of years 8/1/94-7/31/14 (20 yrs; i.e., at least 1 lb of landings is required in any 4 years over this time period).	Moderate +	Moderate +	Indirect slight -	Slight - to slight +	No impact to moderate - (for eliminated permit holders), no impact to slight + (for remaining permit holders)
1B-7	Requalify at $\geq 1,000$ pounds cumulatively over 8/1/94-7/31/14 (20 yrs).	Moderate +	Moderate +	Indirect slight -	Slight - to slight +	No impact to moderate - (for eliminated permit holders), no impact to slight + (for remaining permit holders)

^a All impacts to human communities are uncertain and likely mixed depending on the stakeholder/community affected, as described in section 7.1.5.

1.3.2 Impacts Summary for Alternative Set 2: Commercial Quota Allocation

The quota reallocation alternatives under alternative set 2 are not expected to impact overall fishing effort in terms of annual catch and landings (i.e., total removals of summer flounder from the commercial fishery), which will remain driven by annual catch and landings limits. The allocation alternatives will primarily affect access to the resource at the state/and or individual fishing vessel level within the management unit, depending on the allocation option selected. This could result in a somewhat modified distribution of fishing effort in space and time, although the extent to which this would occur is difficult to predict. In general, the commercial fishery for summer flounder is typically prosecuted by larger trawl vessels fishing offshore in federal waters in the winter months (approximately late October through April), while summer effort (approximately May through early October) takes place primarily in state waters from a mix of gear types and vessels sizes. These patterns correspond with the seasonal inshore-offshore migrations of summer flounder (see section 6.1.3.1.)

Under reallocation alternatives, offshore winter fishing effort is not expected to change substantially in terms of location, as the larger vessels that typically participate in this season have historically been more mobile vessels that target prime summer flounder fishing locations offshore even when long travel distances are required to do so. For this fleet, footprints of fishing effort do not necessarily closely correlate with distance from state of landing. However, it is also possible that there could be a shift in the balance of offshore winter vs. inshore summer effort under some reallocation alternatives, due to changes in the allocation for states that are dominant in the winter fishery.

Nearshore effort observed mainly in the summer months (prosecuted by a variety of vessel types with more representation from smaller day boats) may see a small to moderate shift in location under some reallocation alternatives, as discussed below; however, the extent to which this may occur is difficult to predict and would depend on other factors such as management response to increased or decreased quotas.

The reallocation alternatives are expected to modify the distribution of landings (and thus revenues) by state and port, resulting in impacts to vessels, shoreside businesses, and communities/states. Changes in access could also possibly impact effort changes related to the total number and duration of trips and hauls for summer flounder, if modified allocations resulted in modified participation in terms of vessel types, vessel sizes, or gear types; however, in general these changes are not expected to be substantial.

Summer Flounder

Because the overall catch will remain driven by annual catch limits, reallocation alternatives in general are expected to contribute to an overall management strategy designed to prevent the stock from becoming overfished, leading to positive overall impacts on the target resource. Changes in effort resulting from reallocation are not expected to result in biological consequences to the summer flounder stock that would lead to a negative stock condition. Similar to the impacts described for permit requalification alternatives, all commercial allocation alternatives are expected to result in moderate positive impacts to the summer flounder stock.

Non-Target Species

For non-target species, under **alternative 2A**, no allocation changes would be made and thus this alternative would be expected to have moderate positive impacts on non-target species by maintaining their current overall positive stock status. Any changes in distribution of fishing effort (as discussed above) resulting from reallocation **alternatives 2B-2D** could possibly lead to changes in interaction rates that may influence non-target stock status, although these effects are highly uncertain. The distributions of most relevant non-target species overlap heavily with that of summer flounder (e.g., scup, black sea bass, and spiny dogfish). For Northeast skate complex, it is possible that a northward shift in effort, in particular under **alternatives 2B-1 and 2B-2**, could result in a change in interaction rates with these species, but it is unclear whether this would realistically influence stock status if it did occur. For all species, any shifts in effort toward areas where non-target species are more heavily concentrated in terms of biomass could influence non-target stock status, although the likelihood of this happening is unknown. If little or no changes in effort are observed, or if interaction rates do not substantially change, **alternatives 2B-2D** would have moderate positive impacts on non-target species similar to alternative 2A. If reallocation resulted in increased interaction rates with non-target species, it is possible that slight negative impacts could result. Overall, **alternatives 2A-2D** are likely to result in a range of impacts from slight negative to moderate positive.

Habitat

Similar to the impacts described above for permit requalification, overall fishery effort, and spatial and temporal patterns of fishing effort impacting habitat, are not expected to be altered by the allocation alternatives. Fishing effort for summer flounder will continue in areas that have been fished by many gear types over many years. This continued effort impedes recovery of any degraded habitats within this footprint, leading to slight negative indirect impacts on habitat. All alternatives under alternative set 2 will have a similar magnitude of slight negative impacts to habitat.

Protected Resources

For **alternative 2A**, no changes in the prosecution of the fishery or distribution of effort are expected, and thus this alternative is expected to result in impacts similar to those described above for alternative 1A: slight negative to moderate positive overall. For **alternatives 2B-2D**, impacts are similar to those described above for federal permit requalification, except that reallocation alternatives are more likely to influence the actual distribution of commercial effort, resulting in a wider range of possible impacts. Interactions with protected resources are difficult to predict and can vary based on many environmental and behavioral factors (behavior of both fishermen and protected resources), making conclusions regarding impacts uncertain. In addition, it is unclear how and to what extent effort is expected to shift under these reallocation alternatives, making any changes in interaction rates very difficult to predict.

Alternatives under alternative set 2 are thus could result in slight to moderate negative impacts to ESA-listed species by resulting in continued interactions. Interactions with ESA-listed species could increase or decrease under **alternatives 2B-2D**, depending on resulting behavior and effort changes, however, for ESA-listed species, any action that results in any interactions with or take of ESA-listed resources is expected to have negative impacts. For MMPA-protected species, the

impacts will vary by the stock condition of each species and the actual changes in the prosecution of the fishery resulting from reallocation. For marine mammal stocks/species that have their PBR level reached or exceeded, slight to moderate negative impacts would be expected from all reallocation alternatives 2B-2D. For species that are at more sustainable levels (i.e., PBR levels have not been exceeded), reallocation actions may have impacts ranging from moderate negative to moderate positive, depending on how interaction risks increase relative to what has been in the fishery previously and whether takes are maintained below the PBR level and approaching the Zero Mortality Rate Goal. Overall considering all protected resources, reallocation alternatives are highly uncertain but could range from moderate negative to moderate positive impacts to protected resources under across all alternatives.

Human Communities

The impacts of reallocation alternatives are primarily socioeconomic impacts on states and their fishing communities, including revenues and jobs for vessel owners and crew, shoreside operations, and other associated businesses. **Alternatives 2A, 2B, and 2C** can be generally described in terms of impacts to states, since they either maintain the *status quo* (2A) or propose modified state-by-state quotas (2B and 2C). The socioeconomic impacts from all reallocation alternatives are somewhat uncertain and would vary depending on which sub-alternative is selected. Generally, the magnitude of impacts will vary with the change in allocation relative to a state's existing quota.

Alternative 2A would result in no changes in the current allocation, and therefore would maintain the current condition of the human communities involved in the commercial summer flounder fishery. This condition varies by state and community, with states experiencing varying impacts generally ranging from moderate negative to moderate positive. Generally, states with more allocation currently experience more positive socioeconomic benefits; however, socioeconomic benefits also vary depending on the management approaches used to achieve each allocation, and with external economic and community factors. Overall, the *status quo* socioeconomic condition relative to commercial allocations is mixed.

Alternative 2B is expected to result in mixed socioeconomic impacts that vary by state, with increased revenues in states New York and north and decreased revenues in states New Jersey and south. However, the distribution of positive or negative economic impacts among individual participants and businesses could be highly variable by state depending on restrictions on the overall number of participants and other measures used to manage the fishery in each state. Distribution of economic benefits or costs is also likely to depend on price variations by state and port and other market conditions.

Alternative 2B-2 would be expected to have greater positive socioeconomic benefits to the Northern states compared to alternative 2B-1, as this sub-alternative presents a more substantial shift in allocation from the southern states to the northern states. Likewise, alternative 2B-2 would have more negative socioeconomic impacts on southern states. Under alternative 2B-1, the total amount of allocation shifted from the South to the North would be 6% (with Northern states increasing their relative allocations by 19% and southern states decreasing their relative allocations by 9%), while under alternative 2B-2, allocation shifted to the North from the South would 13% of the coastwide allocation (with the Northern states increasing their allocations by 40% and the

Southern states decreasing theirs by 19%). In both cases, allocation shifts of this magnitude could have substantial impacts on some states. Thus, overall, alternative 2B is likely to result in a range of impacts from high negative to high positive depending on the state, with alternative 2B-2 having impacts on the more extreme ends of that range.

Under **alternative 2C**, final state percentage allocations would vary in each year depending on the overall coastwide quota, because the overall allocation percentages vary depending on how much additional quota there is to be distributed. For quotas up to the trigger point, allocations remain *status quo*. In years when the allocation is below the trigger, allocations would be *status quo* and would result in the same socioeconomic impacts as described under alternative 2A.

As the annual commercial quota level grows beyond the quota trigger, the state quota allocation percentages get closer together, i.e., with increasing quotas above the trigger, quota is distributed more evenly among the states. Under both sub-alternatives, states with current allocations above 12.375% of the coastwide quota (NC, VA, RI, and NJ) will lose allocation percentage as the quota grows beyond the trigger point, likely leading to negative economic impacts for these states. In years when the annual quota was above the trigger, the impacts to each state would vary depending on the final quota and thus the final allocation, with more extreme changes to allocation occurring in years where the quota is well above average. Under annual quotas close to the trigger amount, slight negative impacts (to NC, VA, RI, and NJ) and slight positive impacts (to all other states) are possible; in years where the annual quota is well above the trigger, the impacts have the potential to be high in magnitude due to substantial modifications to the coastwide allocation.

States that currently have allocations between 2% and 12.5% (MD, CT, NY, and MA) are likely to strongly benefit from these alternatives in years where the annual quota is moderately to substantially above the trigger, whereas the states of North Carolina and Virginia may lose a substantial portion of their quota in years where the annual quota is relatively high. The potential negative economic impacts associated with states that lose share of the overall quota could be somewhat mitigated by the fact that this loss would only happen in relatively higher quota years, meaning revenues for these states may be more stable than what would be expected under a permanent reallocation. For all states, the annual variability in allocation under this alternative may lead to reduced predictability in revenues and a reduced ability to plan for business and infrastructure needs.

The difference between alternative 2C-1 and 2C-2 is the annual quota trigger, which would impact in how many future years the allocation is modified. Alternative 2C-1 is likely to have a higher magnitude of impacts (positive or negative depending on the state) in the long-term compared to alternative 2C-2 given that the trigger is lower and thus allocations would be modified in more years under this alternative compared to 2C-2.

Overall, alternatives 2C-1 and 2C-2 are expected to result in a range of socioeconomic impacts from high negative to high positive, depending on the state and the annual quota in each year.

Alternative 2D (the "scup model" allocation) is the most extreme departure from current management given that it opens the winter fishery to any permitted vessel. Because this quota system eliminates the historical year-round state-by-state quota system, the expected impacts of this alternative are highly uncertain, more so than the impacts of the other allocation options.

It is impossible to predict what the socioeconomic impacts of this alternative may be on any given state due to the uncertainty regarding how many vessels would participate in the winter fishery, and what specific management measures would be implemented under each quota period. In addition, alternative 2D could lead to high fishing effort toward the beginning of each winter period, which could lead to increased competition for fishing grounds and market share, and market effects such as price fluctuations and discontinuous supply.

Some vessels would likely be unsuccessful in maintaining stable revenues under this management system, if they are unable to remain competitive during coastwide fishing periods, particularly if an influx of effort increased competition. However, some vessels are highly likely to benefit from a scup model management system. In particular, large vessels that are capable of remaining competitive in the offshore winter fishery, as well as smaller vessels that participate primarily in the summer in states with moderate to high summer allocations are likely to benefit.

Shoreside communities would also be impacted by alternative 2D. Many states have invested heavily in shoreside infrastructure to support their state's vessels. Under alternative 2D, the distribution of landings in the winter would be driven more by vessel preference and market factors, which would positively impact some shoreside businesses and negatively impact others.

Overall, alternative 2D is likely to have impacts to human communities ranging from high negative to high positive, and would vary by individual vessel and shoreside community.

The difference between alternative 2D-1 and 2D-2 is whether or not the state of Maryland is exempt from the three-period quota system. Under alternative 2D-1, Maryland will maintain their existing state allocation and continue managing under their IFQ system. In this case, for Maryland, the socioeconomic impacts are likely to be moderate positive. Under alternative 2D-2, the state of Maryland has indicated that high negative socioeconomic impacts are possible given that the "scup model" system is incompatible with their IFQ management. For all other states, there would likely be a negligible difference between these two sub-alternatives.

A summary of impacts to each VEC is provided in Table 4.

Table 4: Summary of impacts of Alternative Set 2: requalification of existing commercial moratorium permits. + = positive, - = negative.

Alt.	Description	Expected Impacts				
		<i>Summer flounder</i>	<i>Non-target species</i>	<i>Habitat</i>	<i>Protected Resources</i>	<i>Human communities^a</i>
2A	No action/ <i>status quo</i>	Moderate +	Moderate +	Indirect slight negative	Slight - to Slight +	Mixed; Moderate + to Moderate - depending on state
2B-1	Adjust State Quotas Based on Recent Biomass Distribution; as a percent change relative to Northern region	Moderate +	Uncertain; Slight - to Moderate +	Indirect slight negative	Uncertain; Moderate - to Moderate +	Mixed; High - to High+ depending on state
2B-2	Adjust State Quotas Based on Recent Biomass Distribution; as an absolute shift relative to coast	Moderate +	Uncertain; Slight - to Moderate +	Indirect slight negative	Uncertain; Moderate - to Moderate +	Mixed; High - to High+ depending on state
2C-1	Revise state allocations above annual quota trigger point of 8.40 mil lb	Moderate +	Uncertain; Slight - to Moderate +	Indirect slight negative	Uncertain; Moderate - to Moderate +	High - to High + depending on state, variable with annual quota
2C-2	Revise state allocations above annual quota trigger point of 10.71 mil lb	Moderate +	Uncertain; Slight - to Moderate +	Indirect slight negative	Uncertain; Moderate - to Moderate +	High - to High + depending on state, variable with annual quota
2D-1	"Scup model" with coastwide winter periods and state-by-state summer period, Maryland exempt	Moderate +	Uncertain; Slight - to Moderate +	Indirect slight negative	Uncertain; Moderate - to Moderate +	Uncertain; High - to High +; variable by state and vessel
2D-2	"Scup model" with coastwide winter periods and state-by-state summer period, Maryland NOT exempt	Moderate +	Uncertain; Slight - to Moderate +	Indirect slight negative	Uncertain; Moderate - to Moderate +	Uncertain; High - to High+; variable by state and vessel

^a All impacts to human communities are uncertain and likely mixed depending on the stakeholder/community affected, as described in section 7.2.5.

1.3.3 Impacts Summary for Alternative Set 3: Landings Flexibility Framework Provisions

The framework provision alternatives proposed in this action are administrative and intended to simplify and improve the efficiency of future landings flexibility actions to the extent possible. Under this alternative set, the Council and Board would either take no action, or modify the list of framework provisions in the FMP, which would have no effect on summer flounder management until a future framework action was developed and implemented through a separate process.

Because these alternatives are administrative, they are expected to have no impacts on any of the VECs. The impacts of any future framework action relevant to landings flexibility would be analyzed through a separate process, including additional opportunities for public comment. It is not possible to predict the magnitude and direction of impacts of any future landings flexibility framework actions, because impacts will depend on the configuration of landings flexibility. Future actions would need to define how landings flexibility would work, including resolving questions related to who would be allowed to or required to participate in landings flexibility programs, how such policies should be enforced, and how quota would need to be transferred to maintain the underlying state-by-state quota system (if quota remains allocated by state). Given these issues, depending on how landings flexibility is configured, the social and economic impacts associated with a future framework action may be significant and require substantial analysis. Although the timeline for Magnuson Stevens Act requirements could be shortened by completing a framework instead of an amendment, an EIS may still be required for NEPA analysis depending on the expected impacts of future management options, extending the timeline of a typical framework and possibly eliminating time savings entirely.

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3.0 LIST OF ACRONYMS AND ABBREVIATIONS

ABC	Acceptable Biological Catch
ACFCMA	Atlantic Coastal Fisheries Cooperative Management Act
ALB	Albatross (NOAA vessel)
ALWTRP	Atlantic Large Whale Take Reduction Plan
ALWTRT	Atlantic Large Whale Take Reduction Team
ASM	At-sea monitoring
ASMFC	Atlantic States Marine Fisheries Commission (Commission)
ASSRT	Atlantic Sturgeon Status Review Team
ATGTRS	Atlantic Trawl Gear Take Reduction Strategy
ATGTRT	Atlantic Trawl Gear Take Reduction Team
BDTRP	Bottlenose Dolphin Take Reduction Plan
BMSY	Biomass at maximum sustainable yield
BTG	Bottom-tending gear
C.F.R.	Code of Federal Regulations
CEA	Cumulative Effects Assessment
CeTAP	Cetacean and Turtle Assessment Program
CEQ	Council on Environmental Quality
CPH	Confirmation of Permit History
CPUE	Catch per unit effort
CV	Coefficient of Variation
DEIS	Draft Environmental Impact Statement
DOC	Department of Commerce
DPS	Distinct Population Segment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EFP	Exempted Fishing Permit
EIS	Environmental Impact Statement
E.O.	Executive Order
ESA	Endangered Species Act
F	Fishing mortality rate
FMAT	Fishery Management Action Team
F_{MAX}	Fishing mortality rate that maximizes equilibrium yield per recruit
FMP	Fishery Management Plan
FR	Federal Register
GAR	Greater Atlantic Region
GARFO	Greater Atlantic Regional Fisheries Office (formerly Northeast Regional Office/NERO)
GB	Georges Bank
GOM	Gulf of Maine
GRA	Gear restricted area
GRT	Gross registered tonnage
HAPC	Habitat Area of Particular Concern
HCD	Habitat Conservation Division (GARFO)
HPTRP	Harbor Porpoise Take Reduction Plan
IFQ	Individual Fishing Quota
ITQ	Individual Transferrable Quota
LOA	Letter of Acknowledgement
LOF	List of Fisheries
MAB	Mid-Atlantic Bight
MADMF	Massachusetts Division of Marine Fisheries

MAFMC	Mid-Atlantic Fishery Management Council (Council)
MARMAP	Mid-Atlantic Region Monitoring and Assessment Program
MBTG	Mobile bottom-tending gear
MFMT	Maximum Fishing Mortality Threshold
MMPA	Marine Mammal Protection Act
MOU	Memorandum of Understanding
MRI	Moratorium Rights ID
MSA	Magnuson-Stevens Fishery Conservation and Management Act (as currently amended)
MSY	Maximum Sustainable Yield
MT	Metric tons
NCDMF	North Carolina Division of Marine Fisheries
NEFMC	New England Fishery Management Council
NEFOP	Northeast Fisheries Observer Program
NEFSC	Northeast Fisheries Science Center
NEPA	National Environmental Policy Act
NGO	Non-governmental organization
NM	Nautical mile
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NS	National Standard
NWA	Northwest Atlantic
OY	Optimum Yield
P, Pr, RFF	Past, Present, Reasonably Foreseeable Future
PBR	Potential Biological Removal
PS	Producer surplus
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
SARC	Stock Assessment Review Committee
SAW	Stock Assessment Workshop
SBRM	Standardized Bycatch Reporting Methodology
SDWG	Southern Demersal Working Group
SNE	Southern New England
SSB	Spawning Stock Biomass
SSC	Scientific and Statistical Committee
SST	Sea surface temperature
TAL	Total Allowable Landings
TED	Turtle Excluder Device
TRP	Take Reduction Plan
US	United States
USD	U.S. Dollars
USFWS	U.S. Fish and Wildlife Service
VEC	Valued Ecosystem Component
VIMS	Virginia Institute of Marine Science
VMS	Vessel Monitoring System
VTR	Vessel Trip Report
YPR	Yield per recruit

4.0 BACKGROUND AND PURPOSE

4.1 PURPOSE AND NEED FOR ACTION

Table 5 summarizes the needs for action and the corresponding purposes. The "Need for Action" describes "Why are the Council and Board taking a given action?" For each "Need for Action" there is a "Corresponding Purpose," which is how the Council and Board propose to address the Need for Action. Additional details on the needs and purposes are provided after the table. The alternatives described in this document provide a reasonable range of specific tools to address each purpose, i.e. solve the problem.

Table 5: Summary of purposes and needs for this action.

Need for Action	Corresponding Purpose	Alternatives That Address This Purpose
1. Federal permit qualification criteria have not changed since establishment in 1993. Stakeholders believe lenient original qualifications criteria resulted in more permits than the fishery could profitably support in the long term. Recent lower quotas and concerns about inactive vessels reentering the fishery led to a perceived need to adjust fleet size to more closely reflect current stock and fishery conditions.	Consider reducing federal commercial moratorium permit capacity	<ul style="list-style-type: none"> • 1A • 1B-1 • 1B-2 • 1B-3 • 1B-4 • 1B-5 • 1B-6 • 1B-7
2. Current commercial allocation was last modified in 1993. Summer flounder distribution, biomass, and fishing effort have changed since then, and some believe initial allocations may not have been equitable or were based on flawed data; therefore, stakeholders requested evaluation of alternative allocation systems.	Consider modifications to commercial quota allocation (revised basis for state-by-state allocations or other modified allocation system)	<ul style="list-style-type: none"> • 2A • 2B-1 • 2B-2 • 2C-1 • 2C-2 • 2D-1 • 2D-2
3. Council and Board members would like the ability to address landings flexibility through a simpler and more efficient action in the future if necessary (i.e., if this issue is not addressed by the states or through the Commission process).	Consider adding commercial landings flexibility as a frameworkable issue in the Council's FMP	<ul style="list-style-type: none"> • 3A • 3B

4.1.1 Purpose and Need 1: Consider Reducing Federal Permit Capacity

Qualifying criteria for federal commercial moratorium permits for summer flounder were determined in Amendment 2 to the Summer Flounder, Scup, and Black Sea Bass FMP (1993), and have not been modified since that time. Stakeholders have raised concerns that the qualifying criteria chosen at that time (landed any summer flounder between January 26, 1985 and January 26, 1990) may have been too lenient, resulting in more federal permits than the fishery could profitably support long-term. Many stakeholders believe that the current qualification criteria are thus outdated and should be re-evaluated based on more recent participation data and more comprehensive and accurate landings data that have been collected in recent decades.

In addition, as both the understanding of summer flounder stock status and the Council and Board's approaches to quota setting have changed, overall quotas have been reduced from historic levels on average. There is some concern that the current number of federal permits is too high relative to recent stock size estimates and resulting quotas. Given restrictions and trends in other fisheries, there is concern about a potential increase in inactive permits re-entering the fishery for summer flounder, putting further economic strain on participating vessels under recent lower quota levels. Some stakeholder have requested that the Council and Board consider reductions in fleet capacity to ensure access to the resource for those who have actively participated in the fishery either in recent years or consistently over the many years since implementation of Amendment 2. Thus, the purpose associated with alternative set 1 is to consider whether a reduction in federal permit fleet capacity (i.e., the number of commercial moratorium permits for summer flounder) is appropriate, and if so, how qualifying criteria should be revised.

4.1.2 Purpose and Need 2: Consider Modifications to Current Commercial Quota Allocation

The current commercial allocation is perceived by many stakeholders as outdated given that it was last modified in 1993 and is based on landings data from 1980-1989. Evidence suggests that summer flounder distribution, center of biomass, and location of fishing effort has changed over time, likely due to a combination of stock rebuilding and climate related impacts. As changing environmental conditions have resulted in an apparent shift in the average distribution of biomass for summer flounder, there have been requests to incorporate current distribution information to quota allocations. The intention of incorporating this information is to improve efficiency in the fisheries by providing more access to the resource for states with higher concentrations of summer flounder off their coast.

In addition, many stakeholders believe the initial allocations were not equitable or were developed based on flawed data, for example asserting that historical data for some states is incomplete or inaccurate, in part because data collection methods and requirements during 1980-1989 were not necessarily consistent among states. Some support eliminating state-specific quotas for the winter fishery to increase flexibility in landing location for the commercial fishery. Stakeholders have requested evaluation of alternative systems of allocation that may take these factors into account.

Given the need described above, the purpose associated with alternative set 2 is to consider whether modifications to the commercial quota allocation are appropriate, and if so, how the quota should be re-allocated.

4.1.3 Purpose and Need 3: Consider Adding Landings Flexibility as an FMP Framework Provision

The Council and Board are interested in exploring added flexibility in the commercial fishery in the form of landings flexibility policies, which would give commercial vessels greater freedom to land or possess summer flounder in the state(s) of their choice. The groups determined that such policies may be more effectively developed by state level agreements, which may involve fewer enforcement questions than implementing a coastwide landings flexibility policy. The Council and Board thus moved to send a letter to the states requesting the development of partnerships between states toward increased flexibility in state of landing, including policies that may allow vessels to have multiple state possession limits on board for offloading in multiple states. Because it was uncertain how much progress would be made on these state level policies, the Council and Board

are also considering, through this action, adding landings flexibility policies as a frameworkable item in the Council's FMP, which would allow a future landings flexibility action to be completed more efficiently. The Board likely already has the ability to implement these policies via an addendum to the Commission's FMP. The purpose associated with alternative set 3 is to consider adding landings flexibility policies to the list of management measures in the Council's FMP that could be modified via framework action.

4.2 FMP OBJECTIVES

4.2.1 Current FMP Objectives

The original FMP objectives were adopted via Amendment 2 to the Summer Flounder FMP in 1993 and have remained unchanged since that time. The current FMP objectives are:

1. Reduce fishing mortality in the summer flounder, scup and black sea bass fishery to assure that overfishing does not occur.
2. Reduce fishing mortality on immature summer flounder, scup and black sea bass to increase spawning stock biomass.
3. Improve the yield from these fisheries.
4. Promote compatible management regulations between state and federal jurisdictions.
5. Promote uniform and effective enforcement of regulations.
6. Minimize regulations to achieve the management objectives stated above.

4.2.2 Proposed Revisions to FMP Objectives

The Council and Board are proposing revisions to the current FMP objectives for summer flounder through this amendment. Revisions to are proposed because many managers and stakeholders believe that the current objectives have become outdated and could provide more meaningful guidance if updated. Changes in stock abundance, fishing mortality rates, and the management framework have made the existing objectives less relevant than they could be.

While the current FMP contains only management *objectives*, the proposed revisions contain both broader *goals* as well as objectives. *Goals* are broad, big picture, and aspirational. They can help communicate high-level values and priorities for summer flounder management. *Objectives* are more specific and actionable. They can help describe important steps toward accomplishing goals. *Strategies* refer to specific processes, decision points, and actions the Council and Board may take to achieve objectives and support goals. The current and proposed revisions to FMP objectives do not address specific management strategies, as these are laid out through specific management measures within the FMP.

In the fall of 2015, the Council contracted the Fisheries Leadership & Sustainability Forum (Fisheries Forum)³ to solicit feedback from the Council's Demersal Committee, the Commission's Summer Flounder, Scup, and Black Sea Bass Board, and members of both bodies' Advisory Panels on the structure, content, and use of FMP goals and objectives. Fisheries Forum staff also reviewed feedback on goals and objectives obtained from the amendment scoping process and the Council's 2012 Visioning and Strategic Planning Project Stakeholder Input Report. Fisheries Forum distilled this feedback into a synthesis of ideas, perspectives, and themes of discussion, integrated with

³ <http://www.fisheriesforum.org/>

subsequent recommendations from the Summer Flounder Amendment Fishery Management Action Team (FMAT).⁴

In December 2015, the Council and Board held a workshop on summer flounder FMP goals and objectives, where the groups reviewed the Fisheries Forum synthesis of input on goals and objectives and provided additional feedback and direction for revisions. The feedback from this workshop was incorporated into revised draft goals and objectives that were reviewed by the Demersal Committee in November 2017 and, after slight modifications, approved for public hearings by the Council and Board in December 2017.

The proposed revised FMP Goals and Objectives for summer flounder include three goal statements, each with one or more associated management objectives. **The proposed revisions are as follows:**

Goal 1: Ensure the biological sustainability of the summer flounder resource in order to maintain a sustainable summer flounder fishery.

Objective 1.1: Prevent overfishing, and achieve and maintain sustainable spawning stock biomass levels that promote optimum yield in the fishery.

Goal 2: Support and enhance the development and implementation of effective management measures.

Objective 2.1: Maintain and enhance effective partnership and coordination among the Council, Commission, Federal partners, and member states.

Objective 2.2: Promote understanding, compliance, and the effective enforcement of regulations.

Objective 2.3: Promote monitoring, data collection, and the development of ecosystem-based science that support and enhance effective management of the summer flounder resource.

Goal 3 (combined previous Goals 3 and 4): Optimize economic and social benefits from the utilization of the summer flounder resource, balancing the needs and priorities of different user groups to achieve the greatest overall benefit to the nation.

Objective 3.1: Provide reasonable access to the fishery throughout the management unit. Fishery allocations and other management measures should balance responsiveness to changing social, economic, and ecological conditions with historic and current importance to various user groups and communities.

PLEASE NOTE: While these revisions are not included as an explicit alternative set within this amendment, **the proposed revisions above would not be final until approved by the Council and Board through final action within this amendment.** The Council and Board are seeking feedback from the public on the proposed revisions during the public hearing process.

⁴ This synthesis document is available at: http://www.mafmc.org/s/Tab10_SF-goals-and-objectives.pdf.

4.3 MANAGEMENT UNIT

The management unit for summer flounder (*Paralichthys dentatus*) consists of the U.S. waters in the western Atlantic Ocean from the southern border of North Carolina northward to the U.S.-Canadian border.

4.4 FMP HISTORY AND CURRENT MANAGEMENT

4.4.1 Joint Management Overview

The Mid-Atlantic Fishery Management Council (MAFMC or Council) and the Atlantic States Marine Fisheries Commission (ASMFC or Commission) work cooperatively to develop fishery regulations for summer flounder off the east coast of the United States. The Commission manages summer flounder through their Summer Flounder, Scup, and Black Sea Bass Board (Board). The Council and Board work in conjunction with the National Marine Fisheries Service (NMFS), which serves as the federal implementation and enforcement entity. This cooperative management endeavor was developed because a significant portion of the catch is taken from both state (0-3 miles offshore) and federal waters (3-200 miles offshore, also known as the Exclusive Economic Zone, or EEZ).

The Commission has primary authority for development of FMPs for state waters under the authority of the Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA) of 1993. All Atlantic coast states that are included in a Commission fishery management plan must implement required conservation provisions of the plan or the Secretary of Commerce may impose a moratorium for fishing in the noncompliant state's waters. The Council, under the MSA, has primary authority for developing federal FMPs for Council managed species. The Council and Board meet jointly at least twice a year to approve management measures for the fishery for the upcoming year or years. State fishery departments implement FMP measures under the ACFCMA, while NMFS issues rules to implemented approved FMPs prepared by the Councils.

The joint FMP for summer flounder became effective in 1988 (see section 4.4.2), establishing measures to ensure effective management of summer flounder fisheries. Current required measures include catch and landings limits, commercial quotas, recreational harvest limits, minimum fish sizes, gear regulations, permit requirements, and other provisions as prescribed by the FMP. The large commercial and recreational fisheries for summer flounder are managed primarily using output controls (catch and landings limits), with 60 percent of the landings being allocated to the commercial fishery as a commercial quota and 40 percent allocated to the recreational fishery as a recreational harvest limit. Management also uses minimum fish sizes, gear regulations, permit requirements, and other provisions as prescribed by the FMP.

State regulations apply to vessels fishing in state waters; however, vessels with federal summer flounder permits must abide by the federal regulations regardless of where they are fishing. If state and federal measures differ, the vessel must abide by whichever measure is more restrictive. Approved regulations are enforced through cooperative actions of the U.S. Coast Guard, NMFS Law Enforcement, and state authorities.

The Secretary of Commerce has the ultimate responsibility for summer flounder measures. The Council's proposed FMPs and amendments are submitted to the Secretary of Commerce for approval, which in most cases is delegated to NMFS. NMFS typically prepares specifications and implementing federal regulations for the summer flounder fishery based on the recommendations

of the Council and Commission, if such recommendations are deemed to be consistent with the MSA and other applicable law. NMFS publishes proposed rules in the *Federal Register* for public comment. As mentioned above, the Secretary of Commerce also has ultimate responsibility for determining whether individual state measures are consistent with the Commission's FMP. If the Commission finds a state out of compliance and is unable to rectify this issue, the Commission may notify the Secretary. Within 30 days of receiving the Commission's notice, the Secretary must decide whether the state is out of compliance, and if so, whether the noncompliance compromises the conservation of the fishery. If it does, the Secretary can impose a moratorium on all summer flounder fishing (commercial and recreational), until the Commission and the Secretary determine that the noncompliance has ceased.

4.4.2 Original FMP

The Council first considered the development of an FMP for summer flounder in late 1977. It was determined that the initial plan would be prepared by the Commission, and New Jersey was designated as the state with lead responsibility for the plan. The state/federal draft was adopted by the Commission at its annual meeting in October 1982. The original management measure recommendations in the Commission's plan included a 14-inch total length minimum fish size or a 5.5" minimum net mesh for mobile fishing gear; seasonal measures were not included.

The original Council Summer Flounder FMP (MAFMC 1988) was based on the Commission's management plan and was approved by NMFS in 1988. At the time of Council adoption of the FMP, most states had not implemented the Commission plan. Massachusetts, Rhode Island, Connecticut, New York, and Delaware had 14-inch minimum size limits. New Jersey had a 13-inch limit, while Maryland and Virginia had 12-inch limits and North Carolina had an 11-inch limit. Minimum mesh regulations were in effect for some or all of the waters and/or gear in New Jersey (4.5"), Maryland (2.5" gill net), Virginia (4.5"), and North Carolina (4.5").

The Council's original FMP adopted for public hearings in October 1987 included a minimum fish size and a minimum otter trawl mesh size. In light of industry opposition and negative comments on the enforceability of minimum net mesh rules by NMFS and the Coast Guard, the mesh provision was dropped by the Council in the final version of the FMP (and taken up later in Amendments 1 and 2, as described below). The final version of the original Council FMP did include a 13-inch minimum size requirement (for both recreational and commercial possession), permit requirements, and a plan to begin annually reviewing fishing mortality estimates and the performance of management measures after the third year of FMP implementation.

4.4.3 Amendments and Other FMP Modifications

Amendment 1 to the FMP (1990) added an overfishing definition to the FMP and proposed a minimum net mesh size to protect the 1989 and 1990 year classes. NMFS approved the overfishing definition, but disapproved the minimum net mesh provision because the mesh size along with the existing minimum fish size would not allow the overfished resource to rebuild.

Amendment 2 (1993) was a comprehensive amendment designed to rebuild a severely depleted summer flounder stock. Amendment 2 contained a number of management measures to regulate the commercial and recreational fisheries for summer flounder, including a rebuilding schedule, commercial quotas, recreational harvest limits, size limits, gear restrictions including minimum mesh sizes, and permit and reporting requirements. Amendment 2 established a mesh size exemption for the flynet fishery, as well as the small mesh exemption area, an offshore area where

fishermen participating in the winter trawl fishery may obtain an authorized exemption from the minimum mesh size regulations. Amendment 2 also established the Summer Flounder Monitoring Committee, which meets annually to review the best available biological and fisheries data and make recommendations regarding the commercial quota and other management measures.

Amendment 3 (1993) modified the demarcation line for the small mesh exempted fishery area, and increased the large mesh net possession threshold (established in Amendment 2) to 200 pounds during the winter fishery (November 1-April 30). Amendment 3 also stipulated that otter trawl vessels fishing from 1 May through 31 October could only retain up to 100 pounds of summer flounder before using the large mesh net.

Amendment 4 (1993) adjusted Connecticut's commercial landings of summer flounder and revised the state-specific shares of the coastwide commercial summer flounder quota as requested by the Commission. **Amendment 5** (1993) allowed states to transfer or combine portions of their commercial quota. **Amendment 6** (1994) allowed multiple nets on board if they were properly stowed and changed the deadline for publishing the overall catch limits and commercial management measures to 15 October and the recreational management measures to 15 February. **Amendment 7** (1995) revised the fishing mortality rate reduction schedule for summer flounder.

In 1996, NMFS requested that the black sea bass and scup regulations be incorporated into another existing FMP to reduce the number of separate fisheries regulations issued by the federal government. As a result, the Scup FMP and the Black Sea Bass FMP were incorporated into the summer flounder regulations as **Amendments 8 and 9** (1996) to the Council's Summer Flounder FMP, respectively. There are no Amendments 8 or 9 in the Commission's FMP; the Board opted at the time to manage Scup and Black Sea Bass under separate FMPs. The Council's Amendments 8 and 9 were major amendments that implemented a number of management measures for scup and black sea bass including commercial quotas, commercial gear requirements, minimum size limits, recreational harvest limits, and permit and reporting requirements.

Amendment 10 (1997) made several changes to the summer flounder regulations implemented by Amendment 2 and later amendments to the Summer Flounder, Scup and Black Sea Bass FMP. Specifically, this amendment modified the commercial minimum mesh regulations, continued the moratorium on entry of additional commercial vessels, removed provisions pertaining to the expiration of the moratorium permit, prohibited the transfer of summer flounder at sea, and established a special permit for party/charter vessels to allow the possession of summer flounder parts smaller than the minimum size.

Amendment 11 (1999) was implemented to achieve consistency among Mid-Atlantic and New England FMPs regarding vessel replacement and upgrade provisions, permit history transfer, splitting, and renewal regulations for fishing vessels issued Northeast Limited Access federal fishery permits.

Amendment 12 (1999) brought the FMP into compliance with the new and revised National Standards and other required provisions of SFA. Specifically, the amendment revised the overfishing definitions (National Standard 1) for summer flounder, scup, and black sea bass and addressed the new and revised National Standards (National Standard 8 - consider effects on fishing communities; National Standard 9 - reduce bycatch; and National Standard 10 - promote safety at sea) relative to the existing management measures. The amendment also identified essential habitat for summer flounder, scup and black sea bass. In addition, Amendment 12 added

a framework adjustment procedure that allows the Council to add or modify management measures through a streamlined public review process. Amendment 12 was partially approved on 28 April 1999.

Framework 1 (2001) established quota set-aside for research for summer flounder, scup, and black sea bass. **Framework 2** (2001) established state-specific conservation equivalency measures for the recreational fishery. **Framework 3** (2003) allowed for rollover of winter scup quota, and revised the star data for the summer quota period for the scup fishery. **Framework 4** (2003) established a system to allow for transfer of scup at sea.

Amendment 13 (2003) addressed the disapproved sections of Amendment 12, revised the black sea bass commercial quota system, and addressed other black sea bass management measures. Although there were some alternatives included in public hearing drafts of the document that could have resulted in changes to summer flounder or scup management measures, none were preferred alternatives or approved for implementation. As a result, Amendment 13 has no impact on summer flounder or scup.

Framework 5 (2004) established the ability to implement multi-year specification of quota (for up to three years at a time) for all three plan species. **Framework 6** (2006) established the option of region-specific conservation equivalency measures for the summer flounder recreational fishery. **Framework 7** (2007) built flexibility into the process to define and update stock status determination criteria for each plan species.

Amendment 14 (2007) established a rebuilding schedule for scup and made the Scup Gear Restricted Areas (GRAs) modifiable through the framework adjustment process. **Amendment 16** (2007) implemented Standardized Bycatch Reporting Methodology (SBRM). **Amendment 15** (2011) Established Annual Catch Limits (ACLs) and Accountability Measures (AMs), as required by the 2007 reauthorization of the MSA. **Amendment 19** (2013) modified the AMs for the Council's recreational fisheries. **Amendment 17** (2015) implemented a revised version of the Standardized Bycatch Reporting Methodology (SBRM).

Framework 8 (2015) modified the opening date of the black sea bass recreational fishery to May 15, starting in 2015. **Amendment 18** (2015) eliminated the requirement for vessel owners to submit "did not fish" reports for the months or weeks when their vessel was not fishing, and removed some of the restrictions for upgrading vessels listed on Federal fishing permits. **Framework 9** (2016) modified the southern and eastern boundaries of the Southern Scup Gear Restricted Area (GRA). **Framework 10** (2017) modified the dates of the scup commercial quota periods, such that the month of October was moved to the Winter II quota period.

The Commission's Summer Flounder, Scup, and Black Sea Bass Board has also modified their FMP through several Board-only actions, mostly through their addendum process. These actions are available on the Commission's website at www.ASMFC.org.

4.4.4 Annual Specifications

Summer flounder catch limits and other management measures established under the FMP are annually reviewed and may be revised through a process known as "specifications." This primarily concerns the setting of annual catch and landings limits, which typically fluctuate from year to year based on biological trends in the stock as well as performance of the fisheries. The Council and Board may also modify certain commercial or recreational management measures during the

specifications process, such as minimum size limits, possession limits, seasons, gear requirements and restrictions, and exemption programs.

The Council's Scientific and Statistical Committee (SSC) and Monitoring Committee (MC) recommend annual Acceptable Biological Catch (ABC) levels and Annual Catch Limits (ACLs) for summer flounder, which are then approved by the Council and Commission and submitted to NMFS for final approval and implementation. Amendment 2 (1992) set the allocation of 60% of the total allowable landings (TAL) to the commercial sector as a commercial quota, with the other 40% of the TAL allocated to the recreational sector as a recreational harvest limit. Projected discards are apportioned between the commercial and recreational sectors based on a three-year moving average of discards by sector, and combined with the landings limits to derive the sector-specific ACLs.

The Council first implemented recreational and commercial ACLs, with a system of overage accountability, in 2012 (MAFMC 2011). Prior to this time, the fishery was managed based on total allowable landings. Both the ABC and the ACLs are catch limits (i.e., include both projected landings and discards), while the commercial quota and the recreational harvest limit are landing limits.

The recreational measures are considered later in each year because recreational data from the Marine Recreational Information Program (MRIP) becomes available in two-month "waves." The Council and Board want to consider the most up-to-date recreational data possible when making recommendations for the upcoming year.

4.4.5 Commercial Fishery Management

The coastwide annual commercial quota (60% of the TAL for the overall fishery as described above) is currently allocated on a percentage basis to each of the states in the management unit (Maine-North Carolina) based on historical landings from the period 1980-1989.⁵ State-by-state allocations were developed to allow each state to develop specific management programs that were designed for the commercial fishery in their state.

The commercial quota is divided among the states based on the allocation percentages given in Table 6 and each state sets measures to achieve their state-specific commercial quotas. These allocations are included in both the Council and the Commission FMPs. When a state's quota has been landed, fishing for and/or landing summer flounder is prohibited in that state. Any quota overages by a state during the year are subtracted from the state's quota the following year.

⁵ Estimated landings by state and year for 1980-1989, as of the time of Amendment 2 development, can be found in Table 2 (pounds) and Table 72 (percentage) of the Amendment 2 document, available at: http://www.mafmc.org/s/SFSCBSB_Amend_2.pdf.

Table 6: State-by-state percent share of commercial summer flounder allocation.

State	Allocation (%)
ME	0.04756
NH	0.00046
MA	6.82046
RI	15.68298
CT	2.25708
NY	7.64699
NJ	16.72499
DE	0.01779
MD	2.03910
VA	21.31676
NC	27.44584
Total	100

These state-by-state shares reflect a revision made later in 1993, after the state of Connecticut argued that during the early and mid-1980s, the state did not have the authority to collect landings data from offshore fishermen, nor did NMFS provide a port agent to the state. Thus, the state contended that their commercial landings during the allocation base years were underreported and that its quota share was too small. Amendment 4 (1993) increased Connecticut's quota share from 0.95% to 2.26%.⁶

States are required to adopt appropriate measures to manage their quota shares, and employ a variety of quota periods, trip limits, and other such measures to do so. Quota periods and other quota management measures vary from state to state (Table 7).

⁶ Revised 1980-1989 landings by state and year, and the resulting quota shares from Amendment 4 can be found in Table 1 of that document, at: http://www.mafmc.org/s/SFSCBSB_Amend_4.pdf.

Table 7: State-specific commercial quota management summary as of April 2017. States may manage their quota as they see fit each year and some states revise their management strategy frequently.

State	Commercial Quota Management Summary
<i>Massachusetts</i>	Two quota periods (30% allocated to January 1-April 22; 70% to April 23-December 31). Landings or possession of fluke by commercial fishermen allowed from 6 AM to 8 PM daily only. Gear-specific season, open days and possession limits.
<i>Rhode Island</i>	Three quota periods (54% of quota allocated to January 1-April 30; 35% to May 1-October 31; 11% from November 1-December 31). Possession limits vary by period.
<i>Connecticut</i>	The harvest strategy is reassessed each year and modified based on annual quota and industry input. Currently, there are four quota periods: Winter I (January 1-March 31), April, Summer (May 1-October 31), Winter II (November 1-December 31). Quota period year-to-date targets include 25% through Winter I; 95% through April and Summer, and 100% through Winter II. Possession limits vary by period and may be adjusted if period target quota is projected to be landed.
<i>New York</i>	Seven quota periods: January-March (25%); April (10%); May (14%); June-July (27%); August-September (14%); October (5%); December (5%). Initial daily trip limit is 70 lb in period 1 and 50 lb in all other periods. Over/under harvest from period 1 rolls into period 7; over/under harvest from period 2 into period 6; over/under harvest from periods 3 through 5 are rolled into the next period.
<i>New Jersey</i>	Six landings periods with differing daily and/or weekly possession limits: January-February; March-April; May-June; July-August; September-October; November-December. Over/under harvest from any of the first five periods is added or deducted from the following period. 10%, but no more than 200,00 pounds, is allocated to bycatch landings when the directed fishery in a given period is closed. The bycatch allocation is divided between the six seasons at the same percentage as for the directed fishery.
<i>Delaware</i>	Delaware qualifies for <i>de minimis</i> status for the commercial summer flounder fishery; the fishery operates under a 200 pound trip limit year round.
<i>Maryland</i>	Managed under an IFQ system, where permit holders may land their allocation year-round with no possession limits. Non-permitted harvesters are subject to the relevant daily possession limits (100 lb per day from the Atlantic Ocean and 50 lb per day from the Chesapeake Bay and tributaries).
<i>Virginia</i>	Two landings periods and a separate allocation for tidal waters. Summer flounder harvest from Virginia tidal waters is limited to 300,000 pounds, 142,114 pounds of which is set aside for the Chesapeake Bay. Period 1 includes the first Monday in January-October 31 (70.7% of the quota after deducting tidal allocation). The second period (November 1-December 31) is allocated 29.3% of the quota, after the tidal allocation. Over/under harvest from the first period may be deducted or added to the second. Possession limits vary by period.
<i>North Carolina</i>	The North Carolina season for landing ocean-caught flounder opens January 1 each year. If 80 percent of the quota is projected to be taken, North Carolina ports are closed to landing of flounder taken from the ocean. The season reopens November 1 if there is remaining quota. If after reopening, if 100 percent of the quota is projected to be taken prior to the end of the year, the fishery is closed.

Amendment 5 (1993) allowed two or more states, with the consent of NMFS, to transfer or combine their summer flounder commercial quota under mutual agreement and with the approval of the NMFS Regional Administrator. These transfers do not permanently affect the state specific share of the coastwide quota that each state receives each year. The ability to transfer or combine quota allows states the flexibility to respond to variations in the resource, short term emergency situations, often called “safe harbor” requests (e.g., when it is unsafe for a vessel to return to its intended port because of weather, mechanical breakdown of vessel, injured crew member, etc.), or

other factors affecting the distribution of catch. A quota transfer may take place after the Regional Administrator receives a request from two or more states, considers the requirements of the quota transfer regulations, and makes a determination to transfer the quota. Approved quota transfers are published in the Federal Register.

Currently, both the Council and Commission's FMPs require a 14-inch total length minimum fish size in the commercial fishery. Trawl nets are required to have 5.5-inch diamond or 6-inch square minimum mesh in the entire net for vessels possessing more than the threshold amount of summer flounder (i.e., 200 lb from November 1-April 30 and 100 lb from May 1-October 31). These requirements are in place in the federal regulations for federal waters and federal permit holders, and each state within the management unit is required to implement these measures as a condition of compliance with the Commission's FMP. A thorough review of summer flounder commercial management measures that can be modified through specifications was conducted in the fall of 2015. The report on those measures can be found at: http://www.mafmc.org/s/Tab11_SF-S-BSB-Commercial-Measures.pdf.

Commercial landings relative to the commercial quotas has varied over the years since quotas were implemented. Reporting and in-season monitoring have improved, meaning that generally the commercial fishery is able to achieve landings very close to the commercial quota in any given year (Figure 1).

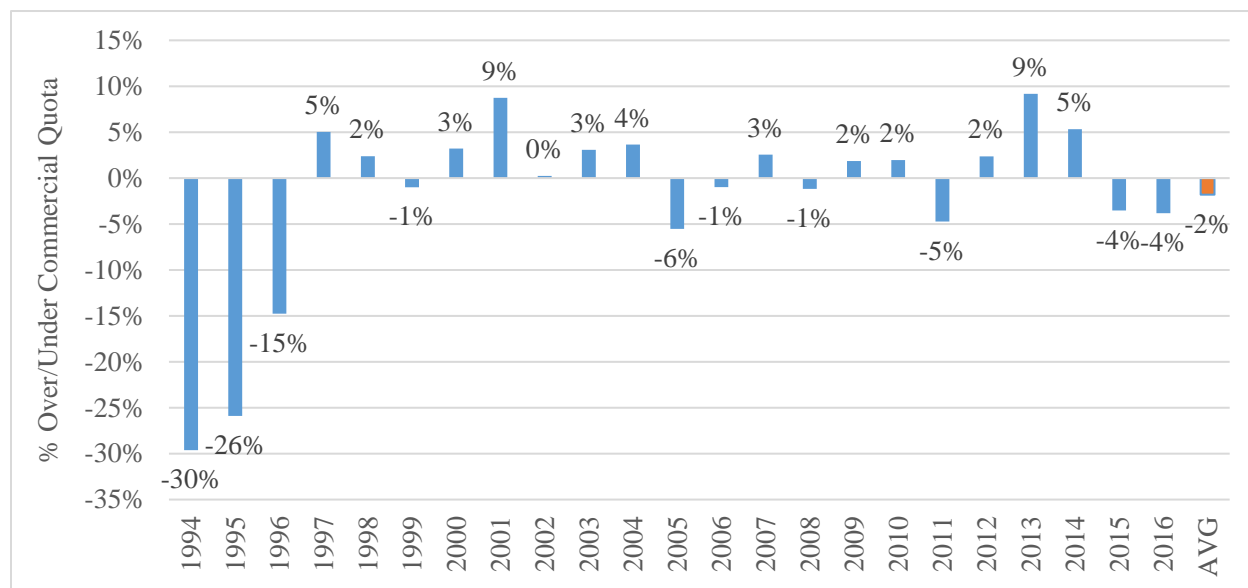


Figure 1: Percent overage/underage relative to summer flounder commercial quota since 1994. Data source: NMFS dealer data as of May 2017.

4.4.6 Recreational Fishery Management

There is a significant recreational fishery for summer flounder, primarily in state waters when the fish migrate inshore during the warm summer months. Each year the Council and Board approve a recreational harvest limit in pounds (landings only) as well as a recreational ACL (landings and discards). The Council and Board also determine annually whether to manage the recreational fishery under coastwide measures or conservation equivalency, as specified under Addendum

IV/Framework 2 (2001) and Addendum VIII/Framework 6 (2003) to the FMPs. Under conservation equivalency, state- or region- specific measures are developed through the Commission’s management process and submitted to NMFS. The combined state or regional measures must achieve the same level of conservation as would a set of coastwide measures developed to adhere to the overall recreational harvest limit. If NMFS considers the combination of the state- or region- specific measures to be "equivalent" to the coastwide measures, they may then waive the coastwide regulation in federal waters. Anglers fishing in federal waters are then subject to the measures of the state in which they land summer flounder. The recreational fishery has been managed using conservation equivalency each year since 2001 (state-specific conservation equivalency through 2013, and regional conservation equivalency since 2014). Recreational measures for 2018 are shown in Table 8.

Table 8: 2017 regional measures for summer flounder and preliminary landings (in thousands of fish) by state and region (regions shaded), 2018.

State	Minimum Size (inches)	Possession Limit	Open Season
Massachusetts	17	5 fish	May 23-October 9
Rhode Island	19	6 fish	May 1-December 31
Connecticut	19	4 fish	May 4- September 30
CT Shore Program (45 designed shore sites)	17		
New York	19	4 fish	May 4- September 30
New Jersey	18	3 fish	May 25-September 22
NJ Shore program site (Island Beach State Park) ^a	16	2 fish	
New Jersey/Delaware Bay COLREGS	17	3 fish	
Delaware	16.5	4 fish	January 1- December 31
Maryland	16.5	4 fish	January 1- December 31
PRFC	16.5	4 fish	January 1- December 31
Virginia	16.5	4 fish	January 1- December 31
North Carolina	15	4 fish	January 1- December 31

4.4.7 History of This Action

In the years leading up to the initiation of this action in December 2013, a number of issues and concerns relative to summer flounder management were raised by Council and Commission members, advisors, and other interested stakeholders. The Council received significant input on summer flounder management during the Council's Visioning and Strategic Planning process, conducted from 2011-2013. During this process, input gathered from surveys, port meetings, and other comment opportunities indicated there was significant stakeholder interest in re-examining and updating summer flounder management strategies.

The Council and Commission proposed this action to evaluate the need for management response to changing conditions in the summer flounder fishery. This includes addressing apparent shifts in the distribution and center of biomass for the summer flounder stock (possibly related to the effects

of rebuilding and/or climate change), as well as changing social and economic drivers for these fisheries. This action was proposed so that the FMP goals, objectives, and management strategies could be assessed in light of these changing fishery conditions, and can be better aligned with stakeholder priorities.

In December 2013, the Council moved:

“...that the Council, pursuant to its strategic plan, develop an amendment to the FMP for summer flounder that will review & update the goals and objectives of the plan and re-examine the fishery management strategies for the commercial & recreational fisheries.”

In June 2014, the Council moved to request that NMFS revise the control date for the commercial summer flounder fishery, for potential use in development of federal permit requalification alternatives. In August, NMFS published an advanced notice of proposed rulemaking, establishing August 1, 2014 as the new control date for the commercial summer flounder fishery (79 FR 44737).

A notice of intent to prepare an EIS was published in the Federal Register on September 16, 2014 (79 FR 55432). NEPA requires that the Council conduct one or more scoping meetings to inform interested parties of the proposed action and alternatives, and to solicit comments on the range and type of analysis to be included in the EIS. A scoping process was conducted from September 16, 2014 through October 31, 2014. Fourteen public scoping hearings were held from Massachusetts through North Carolina.⁷ Hearings were attended by approximately 200 people in total. In addition, a total of 100 written comments were received via email (49), web form (31), mail (17), or fax (3).

Based on the scoping comments received, in December 2014 the Council and Board identified general categories of issues to be explored through the amendment process as possible alternative sets, including 1) FMP goals and objectives, 2) the allocation between the commercial and recreational fisheries, 3) recreational management measures and strategies, and 4) commercial measures and strategies.

However, later in the amendment process, the Council and Board opted to split the action to delay development of FMP modifications involving recreational fishery issues. This decision was due to changes in the Marine Recreational Information Program (MRIP) that were expected to substantially change the time series of recreational catch and harvest. Because this data would be relied upon for analysis of recreational issues, the Council and Board eventually determined that it was problematic to pursue major changes to recreational FMP elements until the MRIP revisions were finalized and the new datasets were publicly available. Thus, the Council and Board chose to delay action on any issues that would rely heavily on recreational data, including: 1) quota allocation between the commercial and recreational sectors and 2) recreational management measures and strategies.

In 2017, the Council and Board identified the following priority issues for development within this action:

1. Fishery Management Plan (FMP) goals and objectives for summer flounder (section 4.2)
2. Commercial management measures and strategies, including:
 1. Federal commercial moratorium permit requalification (section 5.1)

⁷ Scoping documents, including schedule and scoping comment summary, are available at: <http://www.mafmc.org/actions/summer-flounder-amendment>.

2. Commercial allocation (section 5.2)
3. Landings flexibility framework provisions (section 5.3).

Draft options for the above issues were developed by staff and FMAT and refined by the Demersal Committee through several meetings in 2017. The Council and Board approved a range of alternatives for public hearings, based on the Demersal Committee recommendations, at the December 2017 meeting, and approved a public hearing document in April 2018.

5.0 MANAGEMENT ALTERNATIVES

This amendment considers revisions to the commercial summer flounder moratorium permit qualifications, revisions to the commercial allocation formula for summer flounder, and the addition of framework provisions to the FMP that would allow for future framework actions to establish commercial landings flexibility policies.

In recognition of the diversity of potential solutions to these goals, a range of possible options for management measures (“alternatives”) were developed for consideration in terms of their effectiveness and practicability. This approach also complies with the statutory requirements of the National Environmental Policy Act (NEPA) for a consideration of a “range of alternatives” in evaluating the environmental impacts of federal actions. The range of alternatives is presented below. Section 5.1 describes the commercial moratorium permit requalification options, section 5.2 describes the commercial allocation options, and section 5.3 describes the framework provision options for landings flexibility. In addition, several alternatives were considered by the Council and Board and rejected for further analysis. These “considered but rejected” alternatives are described in section 5.4. The complete analyses of the biological, economic, and social impacts of the alternatives presented in sections 5.1-5.3 are presented in section 7.0 of this document.

Note: The Council and Board have not yet identified preferred alternatives.

5.1 Alternative Set 1: Federal Moratorium Permit Requalification

This action considers revision to the requalification criteria for federal summer flounder commercial moratorium permits. The permit requalification alternatives (sub-alternatives under alternative 1B) consider various combinations of landings thresholds and time periods over which those landings thresholds must have been achieved. Only current moratorium rights holders could requalify, and this action **would not allow new entrants to obtain a permit** based on the qualifying criteria. **This action does not consider permit qualification at the state level.**

5.1.1 Alternative 1A: No Action/Status Quo

This alternative would make no changes to the current eligibility for commercial moratorium permits for summer flounder. There is a single limited access federal permit category for the summer flounder commercial fishery: summer flounder moratorium permits. There is no commercial open access permit category for summer flounder nor are there separate permits for incidental catch. A moratorium permit is required to fish commercially for summer flounder in federal waters, and to sell any amount of summer flounder to a federally permitted dealer.

Moratorium permits were established via Amendment 2 to the FMP (1993) and were issued to the owner or operator of a vessel that landed and sold summer flounder in the management unit between January 26, 1985 and January 26, 1990, OR the vessel was under construction for, or was

being re-rigged for, use in the directed fishery for summer flounder on January 26, 1990 (provided the vessel had landed summer flounder for sale prior to implementation of Amendment 2).

All moratorium permits must be reissued on an annual basis by the last day of the fishing year for which the permit is required, unless a Confirmation of Permit History (CPH) has been issued (as described below). To be eligible for a moratorium permit, a vessel must have been issued a moratorium permit in the previous year or be replacing a vessel that was issued a moratorium permit after the owner retires the vessel from the fishery.

The fishing and permit history of a vessel is presumed to transfer with the vessel whenever it is bought, sold, or otherwise transferred, unless there is a written agreement verifying that the transferor/seller is retaining the vessel's fishing and permit history for purposes of replacing the vessel. A limited access permit cannot be “split” from another limited access permit; generally, this means if two or more different limited access permits are on one boat they may not be divided and put on two or more boats.

Confirmation of Permit History

A CPH may be issued when a vessel that has been issued a limited access permit has sunk, been destroyed, or has been sold to another person without its permit history. Possession of a CPH will allow the permit holder to maintain landings history of the permit without owning a vessel. A CPH preserves the eligibility of an individual to apply for a limited access permit for a replacement vessel based on the previous qualifying vessel's fishing and permit history at a subsequent time, subject to the replacement provisions specified in the federal regulations at §648.4. The CPH remains valid until the fishing and permit history preserved by the CPH is used to qualify a replacement vessel for a limited access permit.

Vessel Replacements and Upgrades

A permit holder can submit documentation of a replacement of one vessel or CPH with another vessel and the transfer of fishing histories and limited access permit eligibility from the old vessel or CPH to the new vessel. The qualifying vessel or CPH must be under the identical ownership as the replacement vessel. The vessel length and engine horsepower may be increased either through an upgrade or a replacement. A 10% increase in length overall and a 20% increase in engine horsepower are allowed.

Moratorium Right IDs

A moratorium right ID (MRI) is a unique number associated with a specific fishing right for summer flounder, used by GARFO to track where a particular permit history has been transferred in a vessel replacement and over time. This number is created through the original qualification process for a moratorium program.

A single vessel, regardless of its unique vessel permit number, may have multiple different MRIs (e.g., one MRI for its summer flounder permit, one for its scup permit, one for its scallop permit). If permit history has been transferred from Vessel A to Vessel B (i.e., the vessels via a vessel replacement move their fishing permits from one vessel to the other), the MRIs associated with those three permits of Vessel A would be transferred to Vessel B, even though the vessel permit numbers would stay the same for each vessel and would not transfer. For this reason, a single vessel (identified through its permit number) may be associated with multiple MRIs for summer flounder over time. The fishing permit history and associated landings would be captured through a review at the MRI level, rather than the vessel permit.

5.1.2 Alternative 1B: Requalifying Criteria for Federal Commercial Moratorium Permits

Alternative 1B would impose requalification criteria on current federal summer flounder moratorium permits. Permits not meeting the requalification criteria would be cancelled and could not be renewed. Permits in CPH could requalify if they meet the requalifying criteria. This alternative would **not** allow new entrants to qualify for a moratorium permit.

Alternative 1B has seven sub-alternatives with various combinations of qualification time periods and landings thresholds. Each of the sub-alternatives uses the revised control date for the commercial summer flounder fishery of August 1, 2014, which was published on that date by NMFS at the request of the Council (79 FR 44737). The establishment of the control date notified the public that the Council was considering future limitations on the number of federally permitted participants in the fishery. The control date was intended to help the Council and Board to identify latent effort in the summer flounder fishery. All time frame criteria within all seven sub-alternatives below use requalifying time periods for summer flounder landings *prior to* August 1, 2014.

As described above, eligibility for moratorium permits is tracked by NMFS using a unique moratorium right ID (MRI) number associated with a specific fishing right. This allows permit history tracking where permit history has been transferred in a vessel replacement and over time. Permit history can transfer between vessels through a vessel replacement, and the MRIs associated with those permits transfer as well, even though the vessel permit numbers remain the same for each vessel. For this reason, a single vessel permit number may be associated with multiple MRIs for summer flounder over time. **In this action, any requalification would be done on the basis of landings associated with the MRI, and not the vessel permit number**, since a single MRI could be associated with multiple vessels over time.

If the Council and Board select alternative 1B, one of the sub-options below in Table 9 would need to be selected. The time periods listed below are inclusive of the start and end dates (e.g., option 1B-1 would include qualifying landings dated August 1, 2009 through July 31, 2014). The data used for re-qualification would include commercial summer flounder landings as maintained in NMFS dealer records.

Table 9: Sub-alternatives under Alternative 1B, with comparison to Alternative 1A (*status quo*) and associated number of moratorium rights retained and eliminated. Landings thresholds refer to commercial landings of summer flounder associated with each MRI.

Comparison to <i>Status Quo</i>	Time Period	Landings Threshold	# Current MRIs	% MRIs Requalifying	# MRIs Eliminated	% MRIs Eliminated
<i>Alternative 1A (No Action)</i>	<i>January 26, 1985 - January 26, 1990 (5 yrs)</i>	<i>At least 1 pound in any year over this time period</i>	940	100%	N/A	N/A
Sub-alternative under 1B	Time Period	Landings Threshold	# MRIs Requalifying	% MRIs Requalifying	# MRIs Eliminated	% MRIs Eliminated
Alternative 1B-1	August 1, 2009-July 31, 2014 (5 yrs)	≥1,000 pounds cumulative over this time period	425	45%	516	55%
Alternative 1B-2	August 1, 2009-July 31, 2014 (5 yrs)	At least 1 pound in any year over this time period	493	52%	448	48%
Alternative 1B-3	August 1, 2004-July 31, 2014 (10 yrs)	≥1,000 pounds cumulative over this time period	552	59%	389	41%
Alternative 1B-4	August 1, 2004-July 31, 2014 (10 yrs)	At least 1 pound in any year over this time period	635	67%	306	33%
Alternative 1B-5	August 1, 1999-July 31, 2014 (15 yrs)	≥1,000 pounds cumulative over this time period	646	69%	295	31%
Alternative 1B-6	August 1, 1994-July 31, 2014 (20 yrs)	At least 1 pound in 20% of years in time period (i.e., in at least 4 years over this 20-year period)	670	71%	271	29%
Alternative 1B-7	August 1, 1994-July 31, 2014 (20 yrs)	≥1,000 pounds cumulative over this time period	708	75%	233	25%

5.2 Alternative Set 2: Commercial Quota Allocation

Alternative set 2 contains options for modifying the current state-by-state commercial allocation. All of the alternatives below assume the retention of the current process of subtracting projected commercial discards from the commercial ACL to arrive at a given year's commercial quota. The alternatives below relate to how that commercial quota is distributed by state and throughout the fishing year. GARFO would remain responsible for final landings and overage accounting for each state (where applicable) and for coastwide accounting within the management unit.

Allocation changes through any of the alternatives in this action would be considered a one-time indefinite change. However, **the Council and Board intend to review any selected allocation in not more than 10 years from implementation of this action, to determine whether additional modifications may be warranted.** Following this planned review, the Council and Board may or may not initiate a future action to further revise commercial allocations in this fishery.

5.2.1 Alternative 2A: No Action/Status Quo

This alternative would make no changes to the current state allocation percentages. Currently, the coastwide quota is divided on a percentage basis to each of the states in the management unit (Maine-North Carolina) based on historical commercial landings from the period 1980-1989 (Table 1). Each state then sets measures to achieve, but not exceed, their annual state-specific commercial quotas. These allocations are included in both the Council and the Commission FMPs. When a state's quota has been landed in a given year, commercially targeting and/or landing summer flounder is prohibited in that state. Any quota overages by a state during the year are subtracted from that state's quota the following year.

State-by-state allocations based on 1980-1989 data were developed via Amendment 2 (1993)⁸ to allow each state to develop specific management programs that were designed for the commercial fishery in their state. A simple annual coastwide system was determined to be infeasible because of the migratory patterns of summer flounder. Without some mitigating measures, fishermen at the southern end of the range could possibly catch all the quota before fishermen at the northern end of the range had access to the summer flounder.

In 1993, the state of Connecticut argued that during the early and mid-1980s, the state did not have the authority to collect landings data from offshore fishermen, nor did NMFS provide a port agent to the state. Thus, the state contended that their commercial landings during the allocation base years were underreported and that its quota share was too small. Amendment 4 (1993) increased Connecticut's quota share from 0.95% to 2.26%.⁹ Amendment 5 (1993) allowed two or more states, with the consent of NMFS, to transfer or combine their summer flounder commercial quota. These transfers do not permanently affect the state specific share of the coastwide quota that each state receives each year.

⁸ Estimated landings by state and year for 1980-1989, as of the time of Amendment 2 development, can be found in Table 2 (pounds) and Table 72 (percentage) of the Amendment 2 document, available at: http://www.mafmc.org/s/SFSCBSB_Amend_2.pdf.

⁹ Revised 1980-1989 landings by state and year, and the resulting quota shares from Amendment 4 can be found in Table 1 of that document, at: http://www.mafmc.org/s/SFSCBSB_Amend_4.pdf.

States are required to adopt appropriate measures to manage their quota shares, and employ a variety of quota periods, trip limits, and other such measures to do so. Quota periods and other quota management measures vary from state to state (see section 6.5.2, Table 7).

Table 10: Alternative 2A: No Action/Status Quo; current allocations based on 1980-1989 landings. Quota percentages are taken out to five decimal places in the FMPs and federal regulations.

State	Allocation (%)
ME	0.04756
NH	0.00046
MA	6.82046
RI	15.68298
CT	2.25708
NY	7.64699
NJ	16.72499
DE	0.01779
MD	2.03910
VA	21.31676
NC	27.44584
Total	100

5.2.2 Alternative 2B: Adjust State Quotas Based on Recent Biomass Distribution

Alternative 2B would adjust the current state-by-state quota allocations based on a regional shift in exploitable biomass derived from Northeast Fisheries Science Center (NEFSC) trawl survey data. This would create a basis for state allocations that combines both *status quo* allocations (based solely on landings history) and distribution of biomass (which was not used in development of the current allocations).

A 2017 NEFSC analysis calculated an approximate shift in the percentage of exploitable biomass in a Northern vs. Southern region within the management unit (divided approximately at Hudson Canyon), compared across the ten-year time periods of 1980-1989 and 2007-2016. Calculations were based on NEFSC spring and fall trawl survey catches, length-calibrated to R/V Albatross IV (ALB) equivalents. NEFSC trawl survey data was used because they represent the only data sets spatially and temporally comprehensive enough to describe changes in geographic distribution of the stock over time.

To focus on allocation of commercial landings, length cutoffs were used for summer flounder caught in the survey to identify biomass retainable by the commercial fishery. Given that the commercial minimum size has remained at either 13 or 14 inches over the entire time series, the commercial size frequency has not shifted substantially over the time series. Thus, a 14 inch = 36 cm length cut-off was used for both time periods to capture virtually all of the commercial landings length range in both periods (and some commercial discards), to derive an index of exploitable biomass.

Survey strata were grouped into two regions divided approximately at Hudson Canyon: a Northern region with waters approximately off the states New York and north, and a Southern region with waters approximately off the states New Jersey and south. Based on recommendations of the

Demersal Committee in November 2017, the analysis was revised to include additional survey strata in the Gulf of Maine and Georges Bank. A more detailed description of the analysis methods, including details of the survey strata divisions, can be found in **APPENDIX B** of this document.

North and South indices were weighted by the area surveyed (NM^2) to provide seasonal total indices to express the Northern percentage of the total exploitable biomass for each season and period. The seasonal (spring and fall) exploitable biomass was then summed for each region to calculate total relative biomass for each region and period. Figure 2 shows the results for trends in spring relative biomass for 1980-1989 and 2007-2016 and Figure 3 shows the fall relative biomass over the same time periods.

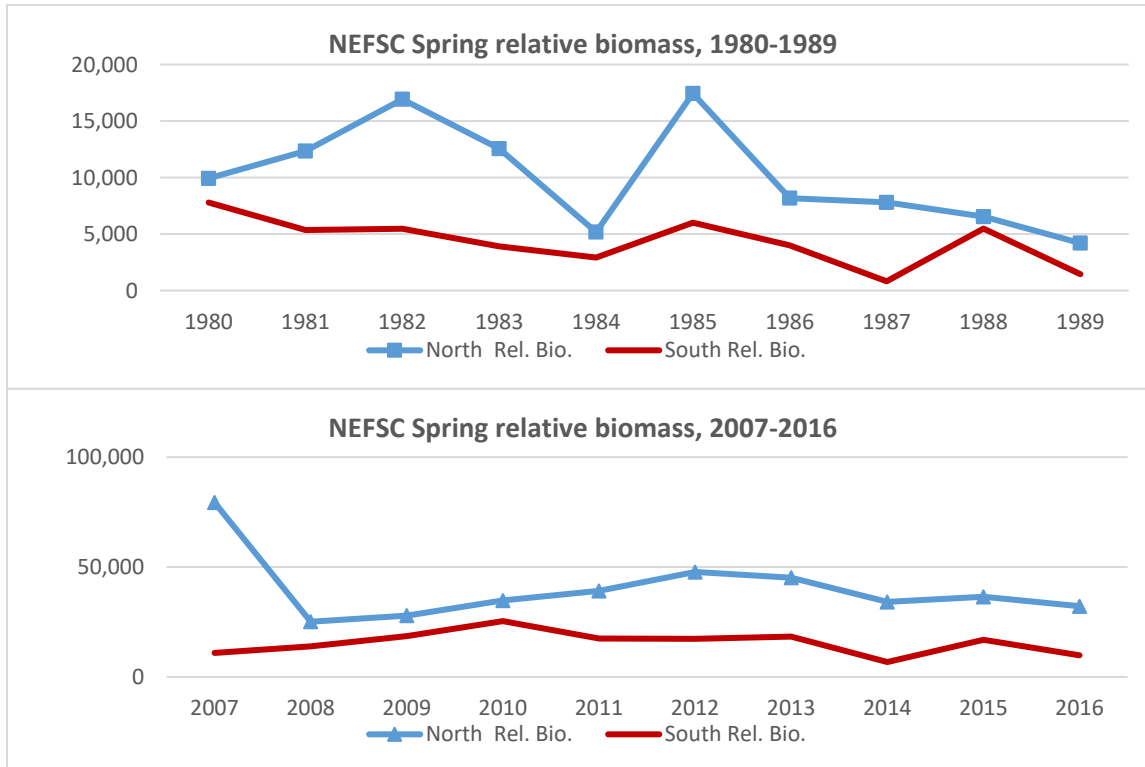


Figure 2: NEFSC spring survey relative biomass for 1980-1989 and 2007-2016; relative to area surveyed.

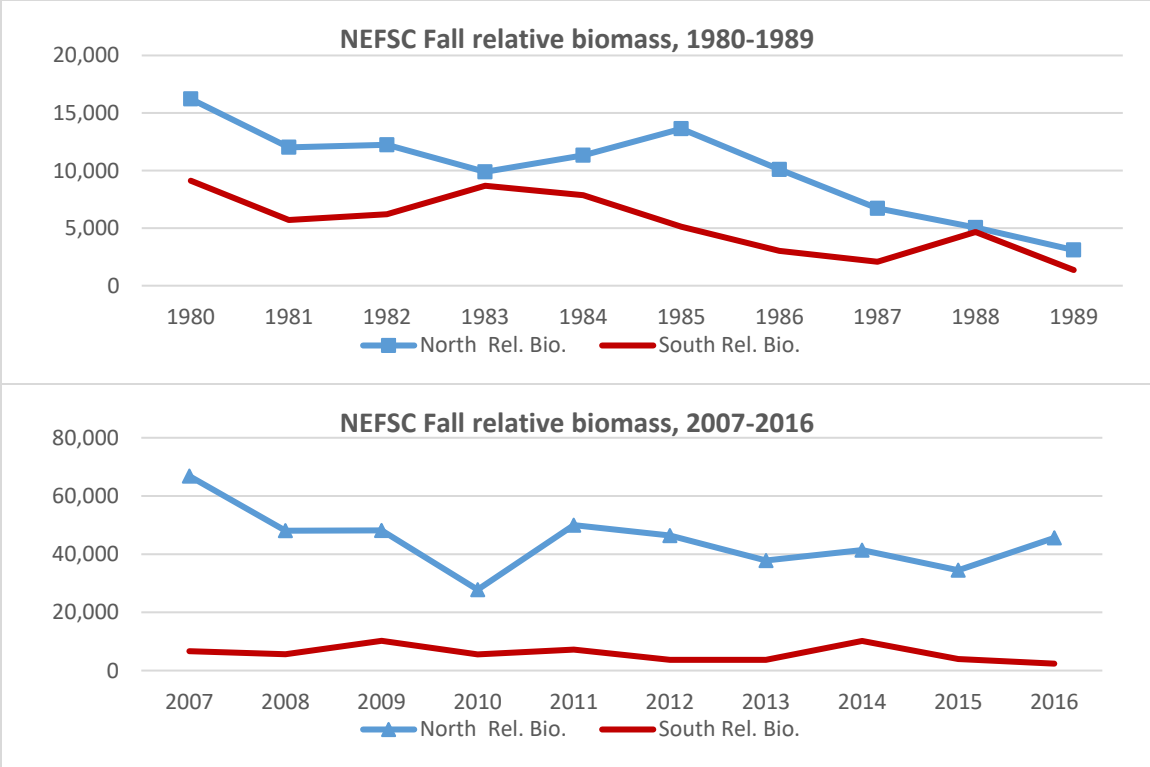


Figure 3: NEFSC fall survey relative biomass for 1980-1989 and 2007-2016; relative to area surveyed.

For relative exploitable biomass averaged over each period, the Northern region percentage increased from 67% on average during 1980-1989 to 80% on average during 2007-2017 (

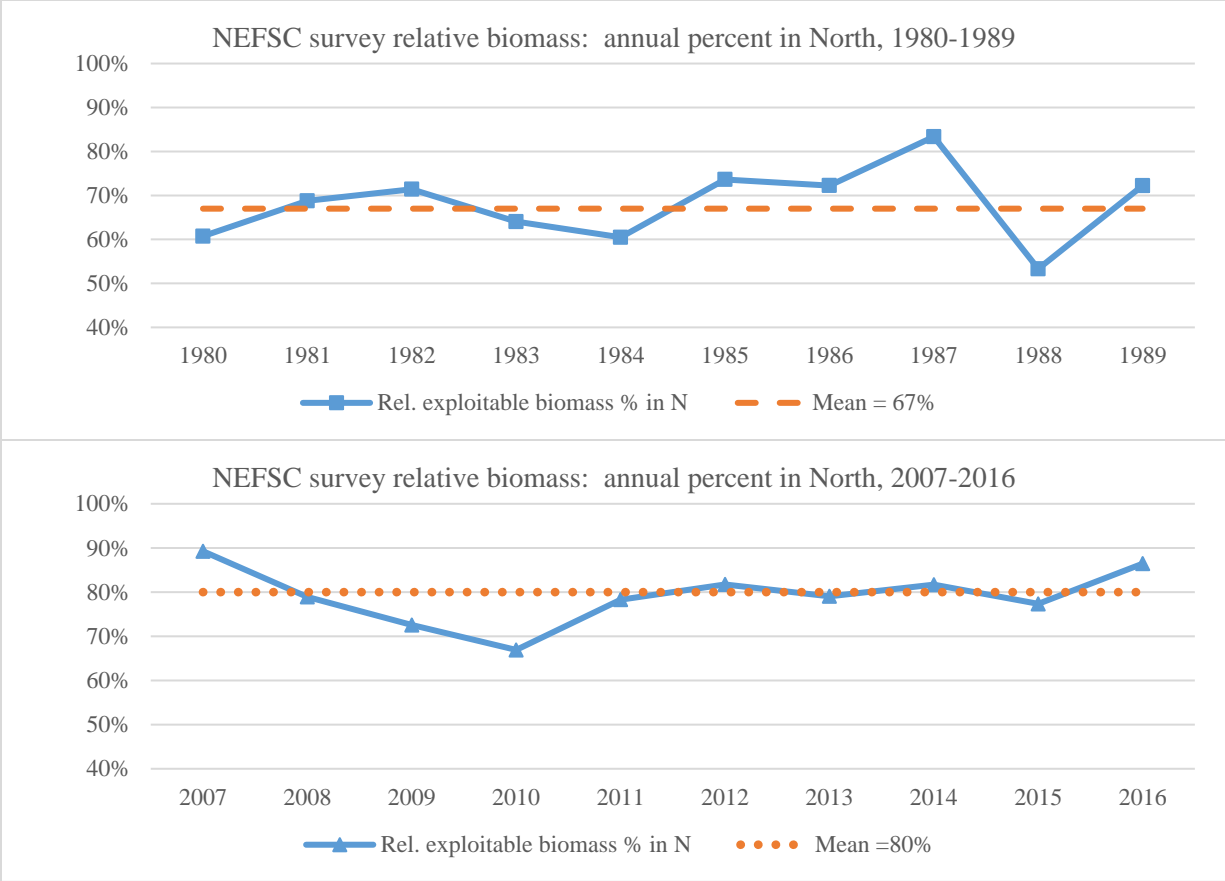


Figure 4), an absolute increase of 13% relative to the coast (+13% in the Northern region, -13% in the Southern region).

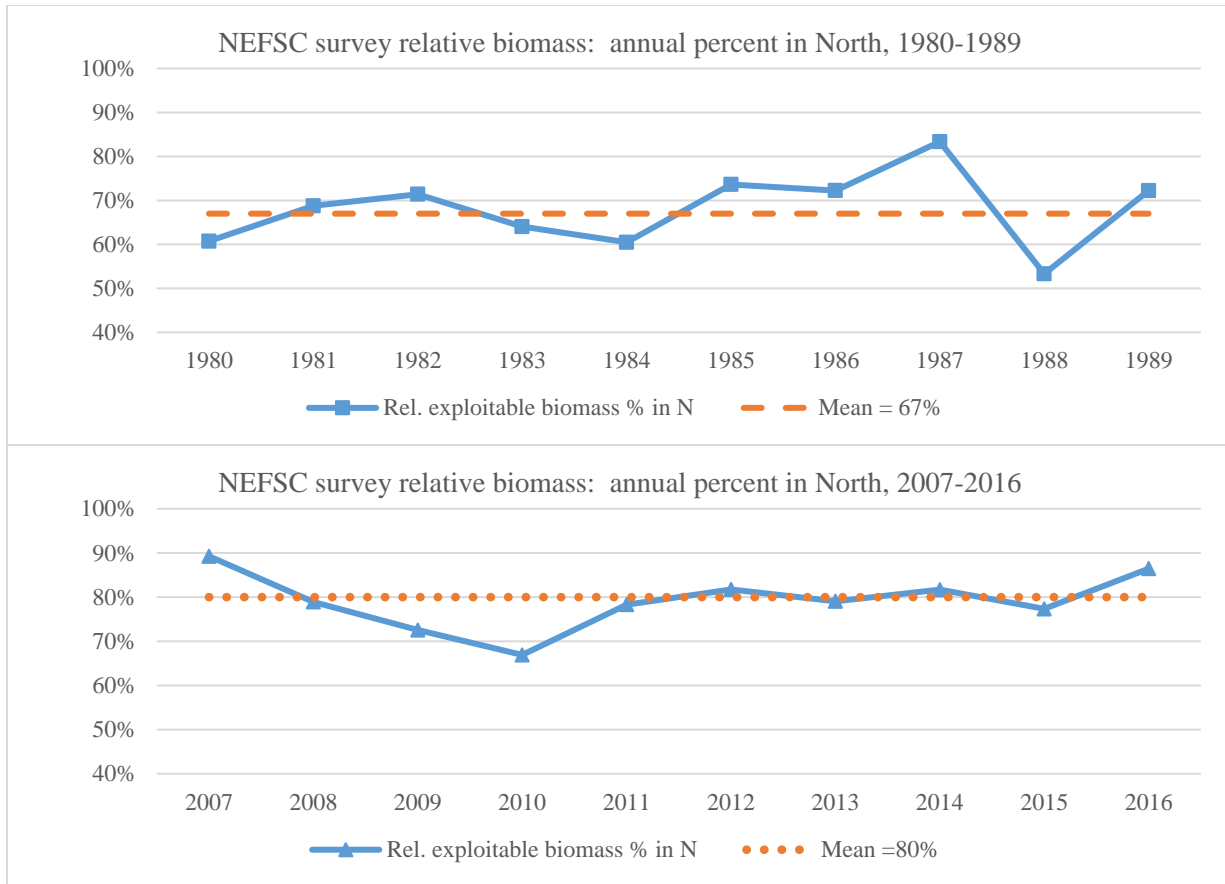


Figure 4: NEFSC survey relative biomass annual percent in Northern region, 1980-1989 and 2007-2016. The remaining relative biomass is attributable to the Southern region.

Under alternative 2B, the change in Northern region relative exploitable biomass would serve as the basis for adjustments to the current state-by-state allocation percentages. Two mathematical methods are proposed as **two sub-alternatives under alternative 2B**, to translate the change in regional exploitable biomass into changes in allocation. These two different approaches, sub-alternatives 2B-1 and 2B-2 described below, are both mathematically justified but have a slightly different emphasis on how much of the revised allocation should be based on recent (2007-2016) exploitable biomass distribution.

The key difference in the sub-alternatives below is whether changes in biomass and allocation are calculated as an absolute shift relative to the coast, or as a percent change relative to the Northern region. For reference, **absolute change or shift** describes the simple difference between the proportions attributable to the Northern and Southern regions in each time period. (e.g., 67% relative exploitable biomass in the North on average from 1980-1989 grew to 80% relative exploitable biomass on average from 2007-2016, an absolute increase in the North of 13%). This describes how the proportions change in the North and South **relative to the coastwide total**.

Percent change expresses the change (percent increase or decrease) **relative to the original regional value**.¹⁰ Because this is an expression of the change between two values relative to the regional starting value, this needs to be calculated using either the Northern or Southern region as the "starting value," with a subsequent adjustment to the other region to make the total allocations equal to 100%.

Regardless of the method, absolute change between the North and South, relative to the coastwide total allocation, will always be equivalent in magnitude (+ to the North, - to the South), since the total coastwide allocation is always 100%. However, the percentage change (% increase or decrease) in state/regional quotas relative to the previous state/regional quotas will never be equivalent in magnitude regardless of the method, because regional starting allocations are different (i.e., starting allocations are not 50/50). If allocations are adjusted using percent changes, a decision needs to be made to start with either the North or the South, and adjust the other region so that final allocations add to 100%.

5.2.2.1 Sub-Alternative 2B-1: Revised Allocation based on Northern Region Percent Change in Exploitable Biomass

The method under alternative 2B-1 translates the change in regional exploitable biomass into a relative change in allocation by taking the percentage change in biomass in the Northern region over the two time periods and applying this as a percentage change to the current Northern regional allocation.

Between 1980-1989 and 2007-2016, as a percent change, the Northern region relative exploitable biomass increased by 19% relative to the 1980-1989 average value $((80-67)/67)*100=+19\%$). This percentage is then applied to the current Northern regional allocation (combination of state allocations ME-NY) as a percent increase: $(32.45%*1.19 = 38.62\%$ revised allocation to the Northern region). The Southern region's allocation is then calculated as the remainder of the coastwide allocation, (i.e., $100\%-38.62\%=61.38\%$). Each regional allocation is divided into state shares based on each state's current proportion of the regional allocation (e.g., Rhode Island currently has 48.32% of the Northern region allocation; this percentage is applied to the revised regional quota allocation of 38.62%).

Alternative 2B-1 is designed to shift current regional allocations in proportion to the regional change in relative exploitable biomass, and maintains more of a connection to the *status quo* allocation compared to alternative 2B-2 while still accounting for how the regional exploitable biomass has shifted over time. The results of this approach produce a modest shift in allocation relative to the coast, shifting 6% of the coastwide allocation from the South to the North. Relative to the existing regional allocations as a percent change, this constitutes a 19% increase in the Northern region's allocation (relative to their starting allocation of ~32.5%), and a 9% decrease in the Southern region allocation (relative to their starting allocation of ~67.5%; again, these percent changes are not equivalent in magnitude because the starting allocation in each region is different). A summary of the resulting regional and state allocations, as well as the changes relative to the coast and relative to the starting regional allocations, are shown in **Table 11**. Revised allocations are taken to five decimal places to be consistent with the current state level allocations.

¹⁰ Percent change is calculated by taking the increase or decrease between the two values, divided by the starting value, using the formula: $\text{Percent change} = (\text{New value} - \text{Old value}) / \text{Old Value} \times 100$. Positive values indicate a percentage increase; negative values indicate a percentage decrease.

Table 11: Alternative 2B-1: adjustment based on Northern region percent change in exploitable biomass. This option expresses the shift in relative exploitable biomass in the North as the percent change between 67 and 80% (=19%) and applies this change as a percent change to the Northern allocation. Southern allocations are calculated from this basis such that total allocations add to 100%. Example state quotas are provided based on an 8.12 million lb coastwide quota with comparison to status quo distribution under the same quota.

State	A) Status quo state allocation (%)	B) Status quo % of regional allocation	C) Status quo state % of regional total (N or S)	D) Revised regional allocation with 19% increase to N states (% change)	E) Revised state allocation under Alt 2B-1 (%) ^a	F) Percent change relative to existing state allocation	G) Change in share of total coastwide quota	H) Example allocation (lbs) based on 8.12 million lb quota	I) Status Quo allocation (lbs) based on 8.12 million lb quota
ME	0.04756	32.45553	0.14654	38.62208	0.05660	+19.0%	+0.00904	4,596	3,862
NH	0.00046		0.00142		0.00055	+19.0%	+0.00009	44	37
MA	6.82046		21.01479		8.11635	+19.0%	+1.29589	659,047	553,821
RI	15.68298		48.32144		18.66275	+19.0%	+2.97977	1,515,415	1,273,458
CT	2.25708		6.95438		2.68593	+19.0%	+0.42885	218,097	183,275
NY	7.64699		23.56144		9.09992	+19.0%	+1.45293	738,913	620,936
NJ	16.72499	67.54448	24.76145	61.37792	15.19806	-9.1%	-1.52693	1,234,083	1,358,069
DE	0.01779		0.02634		0.01617	-9.1%	-0.00162	1,313	1,445
MD	2.0391		3.01890		1.85294	-9.1%	-0.18616	150,459	165,575
VA	21.31676		31.55959		19.37062	-9.1%	-1.94614	1,572,894	1,730,921
NC	27.44584		40.63373		24.94014	-9.1%	-2.50570	2,025,139	2,228,602
Total	100	100	--	100	100	--	0	8,120,000	8,120,001

^a Column E calculated by applying the *status quo* state percentage of regional allocation (column C) to the revised regional allocation with a 19% increase to the Northern region, as a percent change relative to the existing Northern region allocation (column D).

5.2.2.2 *Sub-Alternative 2B-2: Revised Allocation based on Absolute Change in Regional Proportions*

The method under alternative 2B-2 would calculate the change in proportion of relative exploitable biomass relative to the coast (+13% to the Northern region and -13% to the Southern region) and apply this change as an absolute shift in regional allocation. In other words, 13% of the coastwide quota (derived from the absolute shift in exploitable biomass) would be subtracted from the Southern region's quota and added to the Northern region's quota:

- (Existing Northern region allocation) + 13% = (New Northern region allocation), i.e.:
(32.46% + 13%) = 45.46%
- (Existing Southern region allocation) - 13% = (New Southern region allocation), i.e.:
(67.54% - 13%) = 54.54%

As with sub-alternative 2B-1 above, each regional allocation is then divided into state shares based on each state's current proportion of the regional allocation (e.g., Rhode Island currently has 48.32% of the Northern region allocation; this percentage is applied to the revised regional quota allocation of 45.45%).

Alternative 2B-2 creates a basis for allocation that is more based on recent relative exploitable biomass than alternative 2B-1, by more heavily factoring in recent biomass by region into the allocation. This option simply takes the change in regional exploitable biomass relative to the coast over the two time periods (13% shift) and applies this as additional quota in the Northern region. This creates an allocation with more of a basis in recent distribution by region, and less of a basis in *status quo* allocations/historical landings.

The results of this approach produce a more substantial shift in allocation relative to the coast, shifting 13% of the coastwide allocation to the Northern region and reducing the Southern region allocation by 13%. Relative to the existing regional allocations as a percent change, this constitutes a 40% increase in the Northern region's allocation (relative to their starting allocation of ~32.5%), and a 19% decrease in the Southern region allocation (relative to their starting allocation of ~67.5%; again, these percent changes are not equivalent in magnitude because the starting allocation in each region is different). A summary of the resulting regional and state allocations, as well as the changes relative to the coast and relative to the starting regional allocations, are shown in **Table 12**.

Table 12: Allocation modification under Alternative 2B -2 described above. This option uses the 13% absolute shift (67% to 80%) in relative exploitable biomass and applies this change additively to the existing regional allocations. Example state quotas are provided based on an 8.12 million lb coastwide quota with comparison to status quo distribution under the same quota.

State	A) Status quo state allocation (%)	B) Status quo % of regional allocation	C) Status quo state % of regional total (N or S)	D) Revised regional allocation with 13% additive increase to N region	E) Revised state allocation under Alt 2B-2 ^a	F) Percent change relative to existing state allocation	G) Change in share of total coastwide quota	H) Example allocation (lbs) based on 8.12 million lb quota	I) Status Quo allocation (lbs) based on 8.12 million lb quota
ME	0.04756	32.45553	0.14654	45.45553	0.06661	+40.1%	+0.01905	5,409	3,862
NH	0.00046		0.00142		0.00064	+40.1%	+0.00018	52	37
MA	6.82046		21.01479		9.55238	+40.1%	+2.73192	775,653	553,821
RI	15.68298		48.32144		21.96477	+40.1%	+6.28179	1,783,539	1,273,458
CT	2.25708		6.95438		3.16115	+40.1%	+0.90407	256,685	183,275
NY	7.64699		23.56144		10.70998	+40.1%	+3.06299	869,650	620,936
NJ	16.72499	67.54448	24.76145	54.54447	13.50600	-19.2%	-3.21899	1,096,687	1,358,069
DE	0.01779		0.02634		0.01437	-19.2%	-0.00342	1,167	1,445
MD	2.0391		3.01890		1.64664	-19.2%	-0.39246	133,707	165,575
VA	21.31676		31.55959		17.21401	-19.2%	-4.10275	1,397,778	1,730,921
NC	27.44584		40.63373		22.16345	-19.2%	-5.28239	1,799,672	2,228,602
Total	100		100		--	100	100	--	0

^a Column E calculated by applying the *status quo* state percentage of regional allocation (column C) to the revised regional allocation with a 13% shift from the Southern to the Northern states (column D).

5.2.3 Alternative 2C: Revise State Allocations Above a Commercial Quota Trigger Point

This alternative would create state allocations that vary with overall stock abundance and resulting commercial quotas. For all years when the annual commercial quota is at or below a specified annual commercial quota trigger level, the state allocations would remain *status quo*. In years when the annual coastwide quota exceeded the specified trigger, the trigger amount would be distributed according to *status quo* allocations, and the additional quota beyond that trigger would be distributed differently, as described below. There are two sub-alternatives for commercial quota triggers under this alternative:

- **Alternative 2C-1:** 8.40-million-pound trigger based on the recent five-year average of commercial quotas (2014-2018) and;
- **Alternative 2C-2:** 10.71-million-pound trigger based on the recent ten-year average of commercial quotas (2009-2018).

The distribution of additional quota is the same under each sub-alternative; only the specified commercial coastwide quota trigger that determines the additional quota differs. Other options for triggers were considered but rejected from further analysis, as described in section 5.4. The two sub-alternatives above were chosen to strike a balance between the trigger being unrealistically high relative to expected quota levels (and thus having no practical impact in the near future under the current quota regime), and being so low that the allocations would be modified very substantially in most future years.

For both sub-alternatives, the commercial quota up to the trigger amount would be distributed according to *status quo* allocations. The additional quota above the trigger amount would be distributed as follows: states that currently have less than 1% of the current commercial quota allocation (Delaware, New Hampshire, and Maine) would evenly split 1% of the total additional quota (resulting in 0.333% each of the additional quota). The remaining states (Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Maryland, Virginia, and North Carolina) would evenly split the remaining additional quota (resulting in each of these states getting 12.375% each of the additional quota beyond the trigger amount, on top of their current quota share of the base trigger amount). It is important to note that when the quota trigger is exceeded, it is only the additional quota that gets distributed differently, not the entire quota.

Under either sub-alternative, the commercial quota in each year would still be developed based on the recommendations of the SSC and Monitoring Committee, and approved by the Council and Board based on the Council's risk policy. The "new" total allocation percentages by state under both sub-alternatives could not be calculated until the annual commercial quota was known (typically considered in August of any given year), since the state percentages of the coastwide allocation would vary depending on how much "additional" quota was available to be distributed. If in future years the specified quota were at or below this trigger point, the quota allocation would revert to *status quo* (1980-1989 basis as shown in Table 10).

Given that state allocations would vary with the annual coastwide quota, the final state allocations in any given year are unknown; however, a range of reasonably expected allocations can be derived based on past annual quotas assuming future quotas do not change substantially from what has been implemented in the past. Table 13 below shows how often each of these triggers would have been exceeded if applied to historical quotas (1993-2018), and the resulting percent allocation for each state under the time series low coastwide quota (5.66 million pounds; 2017) and time series high quota (17.90 million pounds; 2005). For NC, VA, RI, and NJ, the highest allocation received within this range would be that under *status quo* conditions (i.e., when the trigger is not exceeded). For all other states, the highest allocation percentage corresponds with the highest annual coastwide quota within the range considered (Table 13).

Table 13: Summary of expected range of allocation outcomes of alternatives 2C-1 and 2C-2 given historical quotas.

	Alternative 2C-1		Alternative 2C-2	
Annual commercial quota trigger	8.40 million lb		10.71 million lb	
Frequency of historical quotas at or below trigger (1993-2018)	4 of 26		9 of 26	
Frequency of historical quotas exceeding trigger (1993-2018)	22 of 26		17 of 26	
State allocation under high and low quotas	Alloc. % under low quota (5.66 m. lb) = <i>Status quo allocation</i>	Alloc. % under high quota (17.9 m. lb) = <i>revised allocation</i>	Alloc. % under low quota (5.66 m. lb) = <i>Status quo allocation</i>	Alloc. % under high quota (17.9 m. lb) = <i>revised allocation</i>
ME	0.04756	0.19923	0.04756	0.16235
NH	0.00046	0.17712	0.00046	0.13417
MA	6.82046	9.76840	6.82046	9.05159
RI	15.68298	13.92735	15.68298	14.35424
CT	2.25708	7.62693	2.25708	6.32121
NY	7.64699	10.15627	7.64699	9.54612
NJ	16.72499	14.41634	16.72499	14.97770
DE	0.01779	0.18526	0.01779	0.14453
MD	2.0391	7.52463	2.0391	6.19078
VA	21.31676	16.57113	21.31676	17.72507
NC	27.44584	19.44735	27.44584	21.39225

The main difference between sub-alternatives 2C-1 and 2C-2 is how often the quota is expected to exceed each trigger, and the amount of "additional quota" that would be available under likely future coastwide quota scenarios. Figure 5 shows the time series of commercial quotas since 1993, compared to the quota triggers under 2C-1 (8.40 million pounds) and 2C-2 (10.71 million pounds). Additional details specific to the configuration of alternatives 2C-1 and 2C-2 are provided in sections 5.2.3.1 and 5.2.3.2 below.

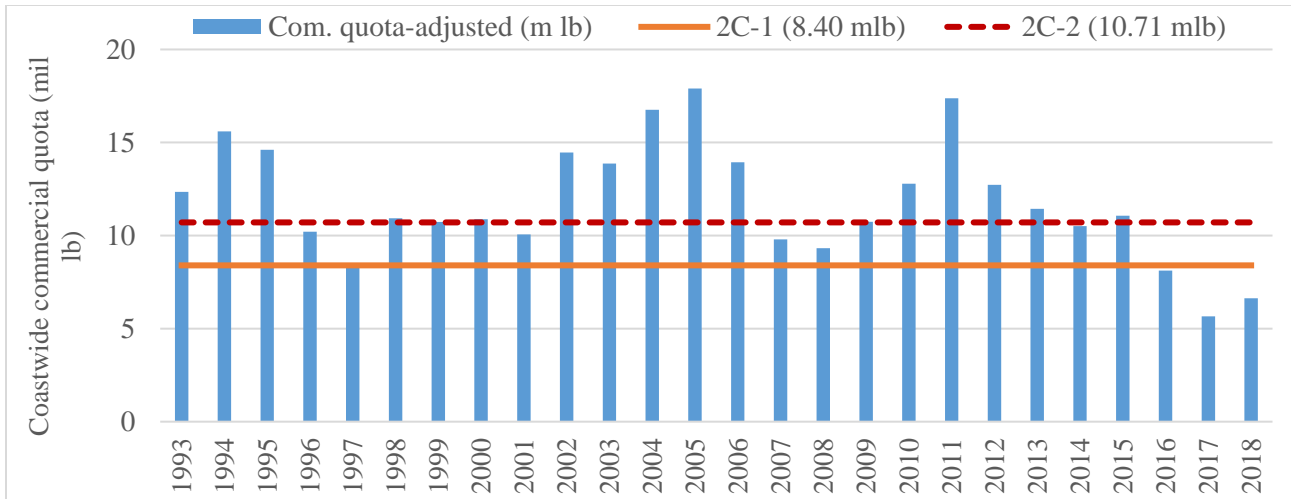


Figure 5: Time series of annual commercial quotas for summer flounder 1993-2018 and proposed commercial quota triggers under alternatives 2C-1 and 2C-2.

5.2.3.1 Sub-Alternative 2C-1: 5-year average commercial quota trigger (8.40 million pounds)

Under alternative 2C-1, quota up to and including 8.40 million pounds would be distributed according to the current (*status quo*) allocation, and the **additional** quota above 8.40 million pounds would be distributed differently. This trigger is based on the 5-year average commercial quota over the years 2014-2018.¹¹

For the additional quota, states that currently have less than 1% of the current commercial quota allocation (Delaware, New Hampshire, and Maine) would evenly split 1% of the total additional quota (resulting in 0.333% each of the additional quota). The remaining states (Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Maryland, Virginia, and North Carolina) would evenly split the remaining additional quota (resulting in each of these states getting 12.375% each of the **additional** quota beyond 8.40 million pounds, on top of their current quota share of the baseline quota of 8.40 million pounds).

In the hypothetical example in Table 14 below, if an 8.12 million pound coastwide annual quota were adopted, the quota would be distributed the same way it is currently (*status quo*; Alternative 2A) since the coastwide quota is below the allocation revision trigger in this sub-option (8.40 million pounds). Under a hypothetical 14.00 million pound coastwide quota, the additional quota would be 5.60 million pounds (14.00-8.40 = 5.60). In this case, the first 8.40 million pounds would be distributed based on *status quo* allocations, and the additional 5.60 million pounds would be distributed such that the states of NC, VA, MD, NJ, NY, CT, RI, and MA would each receive an additional 693,000 pounds of quota that year (each receiving 12.375% of 5.60 million pounds) and DE, NH, and ME would each receive an additional 18,666 pounds (each receiving 0.3333% of 5.60 million pounds; Table 14).

Figure 6 shows that for quotas up to the 8.40 million pound trigger point under alternative 2C-1, allocations remain *status quo*. As the annual commercial quota level grows beyond the quota trigger, the state quota allocation percentages get closer together, i.e., with increasing quotas above the trigger, quota is distributed more evenly among the states.

¹¹ After Research Set-Aside in years when it was deducted from the commercial quota.

Table 14: Alternative 2C-1: modified distribution of additional commercial quota beyond 8.40 million pounds (5-yr commercial quota trigger). Hypothetical quota examples represent initial quotas prior to any transfers or deductions for overages.

State	Allocation of baseline quota ≤ 8.40 mil lb	Allocation of <u>additional</u> quota beyond 8.40 mil lb	Example allocation (lb) under 8.12 mil lb quota (same as <i>status quo</i>) ^a	Example allocation (lb) under 14.00 million lb quota ^b				Comparison to <i>status quo</i> under 14.000 million lb quota	
				<i>Status quo</i> distribution of 8.40 mil lb base quota	New distribution of 5.60 mil lb additional quota	Total quota under 14.00 mil lb CQ	Total new allocation percentage under 14.00 mil lb CQ ^c	<i>Status quo</i> allocation (lb) under a 14.00 mil lb quota	<i>Status quo</i> allocation (%) under a 14.00 mil lb quota
ME	0.04756%	0.333%	3,862	3,995	18,666	22,662	0.16187%	6,658	0.04756%
NH	0.00046%	0.333%	37	39	18,666	18,705	0.13361%	64	0.00046%
MA	6.82046%	12.375%	553,821	572,919	693,000	1,265,919	9.04228%	954,864	6.82046%
RI	15.68298%	12.375%	1,273,458	1,317,370	693,000	2,010,370	14.35979%	2,195,617	15.68298%
CT	2.25708%	12.375%	183,275	189,595	693,000	882,595	6.30425%	315,991	2.25708%
NY	7.64699%	12.375%	620,936	642,347	693,000	1,335,347	9.53819%	1,070,579	7.64699%
NJ	16.72499%	12.375%	1,358,069	1,404,899	693,000	2,097,899	14.98499%	2,341,499	16.72499%
DE	0.01779%	0.333%	1,445	1,494	18,666	20,161	0.14401%	2,491	0.01779%
MD	2.03910%	12.375%	165,575	171,284	693,000	864,284	6.17346%	285,474	2.03910%
VA	21.31676%	12.375%	1,730,921	1,790,608	693,000	2,483,608	17.74006%	2,984,346	21.31676%
NC	27.44584%	12.375%	2,228,602	2,305,451	693,000	2,998,451	21.41750%	3,842,418	27.44584%
Total	100%	100%	8,120,001	8,400,000	5,600,000	14,000,000	100%	14,000,000	100%

^a Under this hypothetical quota, allocation is divided based on *status quo* allocation percentages due to coastwide quota being lower than 8.40 million pounds. **This hypothetical quota results in the same quota distribution as in Alternative 2A and 2C-2.**

^b Allocation of first 8.40 million pounds is divided based on *status quo* allocation percentages. Additional 5.60 million pounds (14.00-8.40) is divided evenly between all remaining states after the states of NH, DE, and ME split 1% of the coastwide quota.

^c Note that total revised state allocation percentages will vary with varying coastwide quotas, depending on how much "additional" quota is available.

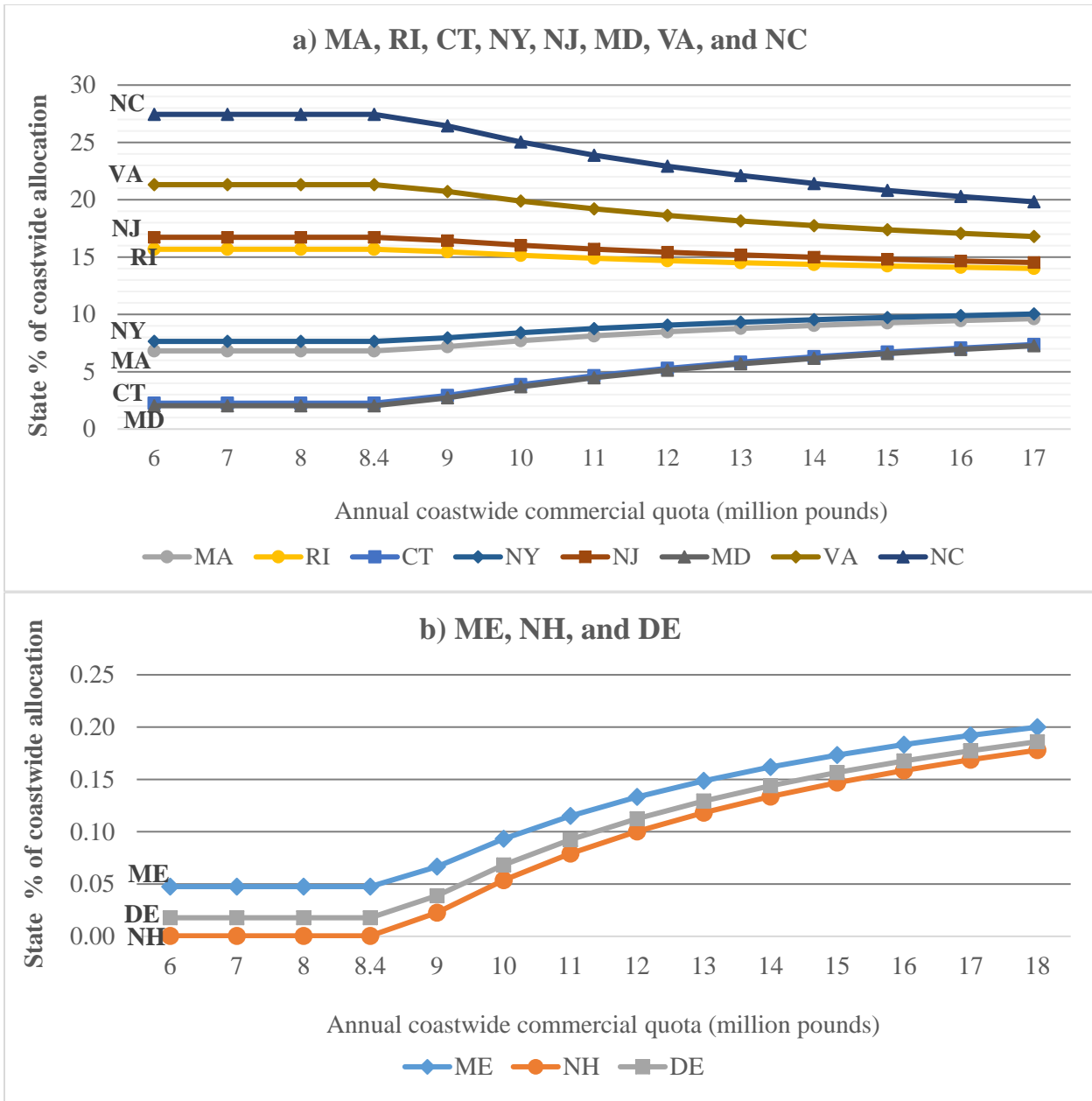


Figure 6: State quota allocation percentage with varying annual coastwise quotas under alternative 2C-1 (8.40 million pound trigger) for a) States with over 1% of the current allocation, and b) Maine, Delaware, and New Hampshire.

5.2.3.2 Sub-Alternative 2C-2: 10-year average commercial quota trigger (10.71 million lb)

Under alternative 2C-2, quota up to and including **10.71 million pounds** would be distributed according to the current (*status quo*) allocation, and the **additional** quota above 10.71 million pounds would be distributed differently. This trigger is based on the 10-year average commercial quota over the years 2009-2018.¹²

As with alternative 2C-1, for the additional quota, states that currently have less than 1% of the current commercial quota allocation (Delaware, New Hampshire, and Maine) would evenly split 1% of the total additional quota (resulting in 0.3333% each of the additional quota). The remaining states (Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Maryland, Virginia, and North Carolina) would evenly split the remaining additional quota (resulting in each of these states getting 12.375% each of the **additional** quota beyond 10.71 million pounds, on top of their current quota share of the baseline quota of 10.71 million pounds).

In the hypothetical example in Table 15 below, with an 8.12 million pound coastwide quota, the quota would be distributed the same way it is currently (*status quo*; Alternative 2A) since the coastwide quota is below the allocation revision trigger (10.71 million pounds). Under a hypothetical 14.00 million pound coastwide quota, the additional quota would be 5.60 million pounds (14.00-10.71 = 3.29). In this case, the first 10.71 million pounds would be distributed based on *status quo* allocations, and the additional 3.29 million pounds would be distributed such that the states of North Carolina, Virginia, Maryland, New Jersey, New York, Connecticut, Rhode Island, and Massachusetts would each receive an additional 407,138 pounds of quota that year (each receiving 12.375% of 3.29 million pounds) and Delaware, New Hampshire, and Maine would each receive an additional 10,967 pounds (each receiving 0.3333% of 3.29 million pounds; Table 15).

Figure 7 shows that for quotas up to the 10.71 million pound trigger point under alternative 2C-2, allocations remain *status quo*. As the annual commercial quota level grows beyond the quota trigger, the state quota allocation percentages get closer together, i.e., with increasing quotas above the trigger, quota is distributed more evenly among the states. As with alternative 2C-1, states with current allocations above 12.375% of the coastwide quota (NC, VA, RI, and NJ) will lose allocation percentage as the quota grows beyond the trigger point.

¹² After Research Set-Aside in years when it was deducted from the commercial quota.

Table 15: Alternative 2C-2: modified distribution of additional commercial quota beyond 10.71 million pounds (10-yr commercial quota trigger). Hypothetical quota examples represent initial quotas prior to any transfers or deductions for overages.

State	Allocation of baseline quota ≤ 10.71 mil lb	Allocation of additional quota beyond 10.71 mil lb	Example allocation (lb) under 8.12 mil lb quota (same as <i>status quo</i>) ^a	Example allocation (lb) under 14.00 million lb quota ^b				Comparison to <i>status quo</i> under 14.000 million lb quota	
				<i>Status quo</i> distribution of 10.71 mil lb base quota	New distribution of 3.29 mil lb additional quota	Total quota under 14.00 mil lb CQ	Total new allocation percentage under 14.00 mil lb CQ ^c	<i>Status quo</i> allocation under a 14.00 million lb quota	<i>Status quo</i> allocation (%) under a 14.00 mil lb quota
ME	0.04756%	0.333%	3,862	5,094	10,967	16,060	0.115%	6,658	0.04756%
NH	0.00046%	0.333%	37	49	10,967	11,016	0.079%	64	0.00046%
MA	6.82046%	12.375%	553,821	730,471	407,138	1,137,609	8.126%	954,864	6.82046%
RI	15.68298%	12.375%	1,273,458	1,679,647	407,138	2,086,785	14.906%	2,195,617	15.68298%
CT	2.25708%	12.375%	183,275	241,733	407,138	648,871	4.635%	315,991	2.25708%
NY	7.64699%	12.375%	620,936	818,993	407,138	1,226,130	8.758%	1,070,579	7.64699%
NJ	16.72499%	12.375%	1,358,069	1,791,246	407,138	2,198,384	15.703%	2,341,499	16.72499%
DE	0.01779%	0.333%	1,445	1,905	10,967	12,872	0.092%	2,491	0.01779%
MD	2.03910%	12.375%	165,575	218,388	407,138	625,525	4.468%	285,474	2.03910%
VA	21.31676%	12.375%	1,730,921	2,283,025	407,138	2,690,162	19.215%	2,984,346	21.31676%
NC	27.44584%	12.375%	2,228,602	2,939,449	407,138	3,346,587	23.904%	3,842,418	27.44584%
Total	100	100%	8,120,001	10,710,000	3,290,000	14,000,000	100%	14,000,000	100

^a Under this hypothetical quota, allocation is divided based on *status quo* allocation percentages due to coastwide quota being lower than 10.71 million pounds. **This hypothetical quota results in the same quota distribution as in Alternative 2A and 2C-1.**

^b Allocation of first 10.71 million pounds is divided based on *status quo* allocation percentages. Additional 3.29 million pounds (14.00-10.71) is divided evenly between all remaining states after the states of NH, DE, and ME split 1% of the coastwide quota.

^c Note that total revised state allocation percentages will vary with varying coastwide quotas, depending on how much "additional" quota is available.

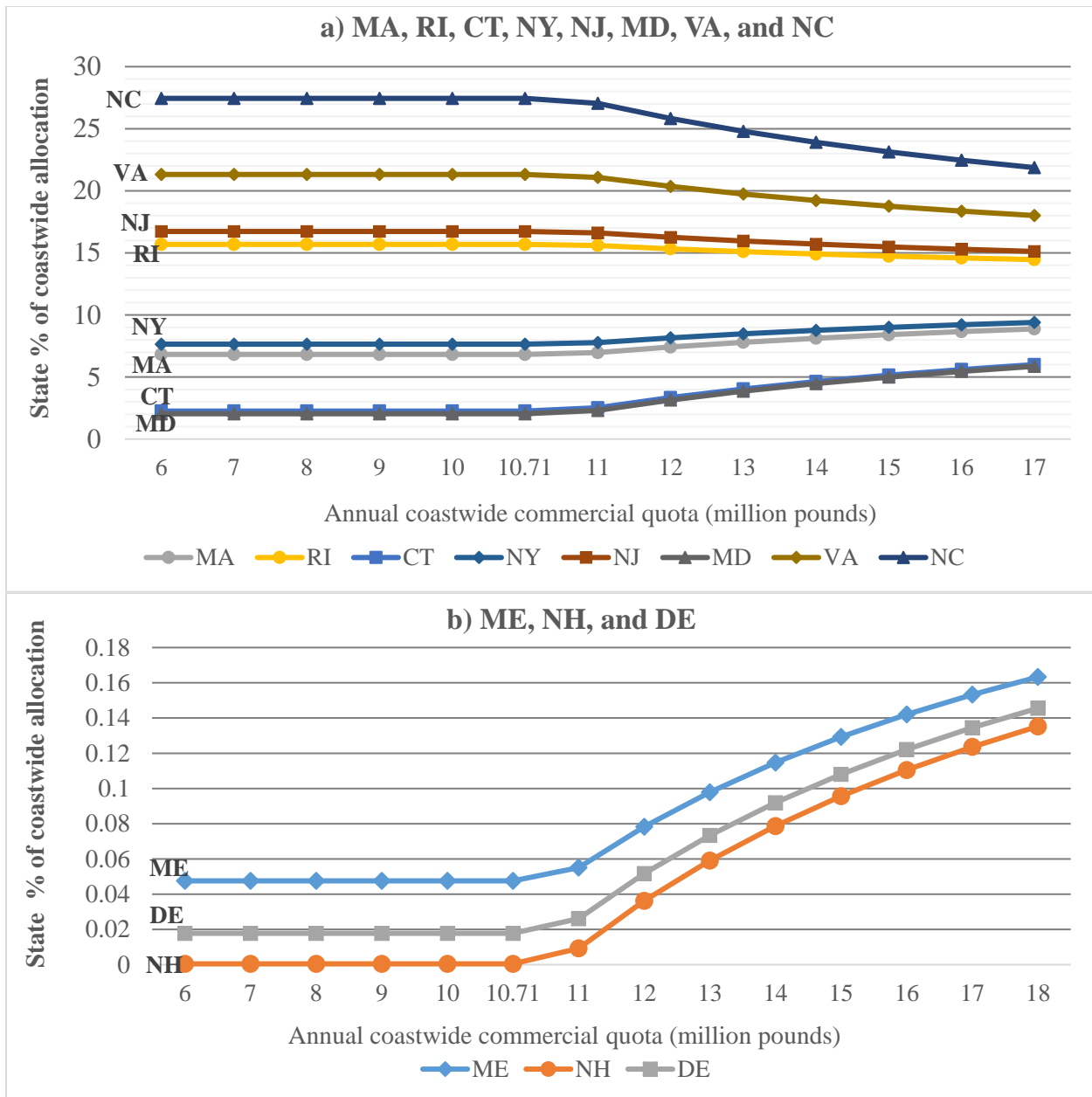


Figure 7: State quota allocation percentage with varying annual coastwide quotas under alternative 2C-2 (10.71 million pound trigger) for a) States with over 1% of the current allocation, and b) Maine, Delaware, and New Hampshire.

5.2.4 Alternative 2D: Implement "Scup Model" Quota System for Summer Flounder

This alternative would allocate the annual summer flounder commercial quota into three unequal periods, similar to the way the commercial scup fishery is currently managed (hence the "scup model" descriptor; this alternative is modeled after the scup fishery but has no impact on scup management). In the two winter periods, January-April (Winter I) and November-December (Winter II), a coastwide quota system would be implemented in conjunction with a system of coastwide landings limits and other measures to constrain landings to the seasonal allocation.

During the winter periods, measures would apply throughout the management unit (i.e., no state-specific measures would be implemented), and vessels could land in any port along the coast provided they have the appropriate state specific permits. All commercial landings during the winter period would count toward the quota for that period. When the period quota has been landed, fishing for and/or landing summer flounder would be prohibited for the remainder of the period. Landings in excess of the allocation for the period would be subtracted from the following year's quota for the same period.

In the Summer period, May-October, the quota would continue to be managed on a coastwide basis in federal waters, but a state-by-state quota system would be implemented by the Commission, but with different state allocations compared to *status quo* given that they would only apply during the summer. Summer quota shares would be managed by individual states, which would be responsible for implementing appropriate possession limits and other management measures during the summer period. As is done for scup, any overall summer period quota overages would be subtracted from the next year's overall summer period quota, and the Commission would work out the appropriate reductions in state quotas according to which states contributed to the overage. States would be allowed to transfer or combine summer quotas through the Commission's process.

For this alternative, there are **two sub-alternatives for consideration that relate to how the state of Maryland would be dealt with in this system**. The state of Maryland has indicated that coastwide management during the winter periods would conflict with their current system of managing commercial summer flounder quota under an Individual Fishing Quota (IFQ) program. **Sub-alternative 2D-1**, described below, would exempt the state of Maryland from this management system and allow them to retain their current state allocation. **Sub-alternative 2D-2** would implement this quota system without an exemption for Maryland. These sub-options are described in detail below, in sections 5.2.4.1 and 5.2.4.2.

5.2.4.1 Sub-Alternative 2D-1: Exemption/Status Quo Management for Maryland

This sub-alternative would implement the “scup model” system for commercial summer flounder with an exemption for the state of Maryland, which manages their commercial summer flounder fishery under an IFQ program. This strategy allows the small number of participants in Maryland's fishery (currently seven IFQ holders) to manage their own allocation as they wish throughout the year. This type of management would not integrate well with coastwide management periods. If Maryland had no state-specific quota during the winter periods, IFQ holders could not be allowed an individual allocation to manage during this time.

Sub-alternative 2D-1 proposes that Maryland's existing state commercial quota percentage for summer flounder (2.03910%) be maintained as a separate state-specific allocation outside of the seasonal period allocation system. Maryland could continue to manage their fishery under an IFQ year-round, and landings from Maryland IFQ vessels during the winter periods would count only toward the annual MD-specific quota rather than the coastwide winter quota. Vessels not licensed to participate in the Maryland fishery would remain unable to land summer flounder commercially in Maryland, except in circumstances related to safe harbor or other inter-state agreements involving the state of Maryland. Similarly, Maryland vessels would be required to land their summer flounder in the state of Maryland rather than anywhere along the coast.

The proposed configuration of sub-alternative 2D-1 is summarized in Table 17, and described below. Example allocations under hypothetical quota scenarios are described in section 6.2.4.

- **Quota period dates** are proposed to be Winter I: January 1-April 30; Summer: May 1-October 31, and Winter II: November 1-December 31. These are the same dates as previously used for scup, prior to the recent modification of quota period dates (83 FR 17314; April 19, 2018). October is proposed to be in the Summer period based on feedback from advisors as well as initial analysis indicating that the characteristics of the October summer flounder fishery generally align more with the summer fishery in terms of area fished (state vs. federal waters), vessel tonnage, and gear types used. Additional information on this conclusion is provided in **Appendix B. The Council and Board have requested specific comments from the public on the proposed quota period dates, especially the month of October.**
- **Allocation between quota periods** under alternative 2D-1 is based on summer flounder landings by period over the past 20 years (1997-2016), for all states in the management unit except Maryland.¹³ 55.26% of the annual quota would be allocated to Winter I, 27.65% to Summer, and 17.10% to Winter II (Table 16). The commercial fishery would close coastwide (in federal and state waters) when the allocation for a given Winter period is projected to be reached. The Regional Administrator would close the EEZ to fishing for summer flounder by commercial vessels when the quota has been landed, and states would be responsible for state waters closures.
- **Quota rollover provisions** would be similar to those in place for the scup fishery. If the full Winter I quota is not harvested, unused quota would be added to the quota for the Winter II period in the same fishing year. Quota is unable to be rolled over from one fishing year to the next under the current FMP.¹⁴
- **Coastwide possession limits** would be needed during the two winter periods. Specific possession limits are not proposed through this action but would need to be developed and reviewed annually by the Summer Flounder, Scup, and Black Sea Bass Monitoring Committee (MC), accounting for changes in the fishery and the annual quota. These recommendations would then be adopted by the Council and Board during the annual specifications process
- **Summer period state allocations** under 2D-1 are based on the percentage contribution of each state's summer period (May-October) landings from 1997-2016 (Table 17).

¹³ Past state-level seasonal regulations (e.g., closures, possession limits) are not explicitly accounted for in this analysis.

¹⁴ For additional discussion of this issue, see page 19 of <http://www.mafmc.org/s/Commercial-Range-of-Alts-Discussion-Doc-4-May-2017.pdf>

Table 16: Percentage of commercial summer flounder landings by proposed quota periods, 1997-2016. EXCLUDES landings from the state of Maryland. Data source: NMFS dealer data (AA tables) as of May 2017.

	Winter I (Jan 1-Apr 30)	Summer (May 1-Oct 31)	Winter II (Nov 1 -Dec)	Total
1997	58.97%	40.04%	0.99%	100.00%
1998	51.23%	27.29%	21.48%	100.00%
1999	56.97%	28.14%	14.89%	100.00%
2000	57.89%	25.82%	16.28%	100.00%
2001	51.07%	25.24%	23.69%	100.00%
2002	54.06%	26.49%	19.45%	100.00%
2003	53.59%	26.01%	20.40%	100.00%
2004	52.63%	25.11%	22.26%	100.00%
2005	58.93%	24.68%	16.39%	100.00%
2006	57.13%	26.14%	16.73%	100.00%
2007	61.24%	30.14%	8.63%	100.00%
2008	56.64%	27.82%	15.54%	100.00%
2009	51.85%	29.34%	18.81%	100.00%
2010	50.51%	29.00%	20.49%	100.00%
2011	57.45%	27.38%	15.16%	100.00%
2012	53.85%	29.68%	16.47%	100.00%
2013	58.49%	25.56%	15.95%	100.00%
2014	54.43%	28.39%	17.18%	100.00%
2015	52.27%	29.42%	18.32%	100.00%
2016	57.76%	28.83%	13.41%	100.00%
Average	55.26%	27.65%	17.10%	100.00%

Table 17: Summary of proposed allocation configuration of Alternative 2D-1 (Maryland exemption), with examples using hypothetical coastwide quotas at 8.12 million lb and 14.00 million lb.

Quota Period	Allocation % (of annual coastwide commercial quota LESS 2.03910% allocated to Maryland)		Measures	Example allocation (lbs) based on 8.12 million lb quota	Example allocation (lbs) based on 14.00 million lb quota		
Winter I (January 1-April 30)	55.26%		Coastwide (except MD)	4,486,850	7,735,948		
Summer (May 1-October 31)	27.65%		State-specific	2,244,955	3,870,612		
<i>State-specific summer allocations</i>	ME	0.015%		ME	347	ME	598
	NH	0.000%		NH	0	NH	2
	MA	19.332%		MA	433,988	MA	748,255
	RI	22.476%		RI	504,568	RI	869,945
	CT	3.566%		CT	80,052	CT	138,021
	NY	18.553%		NY	416,495	NY	718,095
	NJ	29.667%		NJ	666,004	NJ	1,148,283
	DE	0.045%		DE	1,013	DE	1,746
	MD	-- ^a		MD	--	MD	--
	VA	5.648%		VA	126,785	VA	218,594
	NC	0.699%		NC	15,702	NC	27,072
Winter II (November 1 - December 31)	17.10%		Coastwide (except MD)	1,388,195	2,393,440		
Total	100%		--	8,120,000	14,000,000		

^a Under Alternative 2D-1, Maryland would have an annual allocation of 2.03910% of the coastwide quota (and thus no specific seasonal allocation for the summer period quota).

5.2.4.2 Sub-Alternative 2D-2: No Exemption for Maryland

Sub-alternative 2D-2 is similar to alternative 2D-1 except that it would not provide an exemption for Maryland. Maryland IFQ holders would not be able to preserve their current year-round management of their own allocation; instead they would be subject to coastwide measures and closures during the winter periods and state measures during the summer period.

The proposed configuration of sub-alternative 2D-2 is summarized in Table 19, and described below. Example allocations under hypothetical quota scenarios are described in section 6.2.4.

- **Allocation between quota periods** for alternative 2D-2 is based on average summer flounder landings in each proposed period from 1997-2016, in all states Maine through North Carolina. 58.68% would be allocated to the Winter I period, 28.28% to Summer, and 17.04% to Winter II (Table 18).
- **Quota rollover provisions and coastwide possession limit processes** are the same as those described above for alternative 2D-1.
- **Summer period state allocations** under 2D-2 are based on the percentage contribution of each state's summer period (May-October) landings over the period 1997-2016 (Table 19).

Table 18: Percentage of commercial summer flounder landings by proposed quota periods, 1997-2016. Includes all states ME-NC. Data source: NMFS dealer data (AA tables) as of May 2017.

	Winter I (Jan 1-Apr 30)	Summer (May 1-Oct 31)	Winter II (Nov 1 -Dec)	Total
1997	58.50%	40.54%	0.97%	100.0%
1998	50.80%	28.08%	21.12%	100.0%
1999	56.26%	28.92%	14.82%	100.0%
2000	56.96%	26.65%	16.39%	100.0%
2001	51.00%	25.57%	23.43%	100.0%
2002	53.35%	27.24%	19.41%	100.0%
2003	52.89%	26.95%	20.16%	100.0%
2004	52.14%	25.85%	22.02%	100.0%
2005	58.19%	25.64%	16.16%	100.0%
2006	56.56%	26.70%	16.74%	100.0%
2007	59.76%	31.72%	8.52%	100.0%
2008	55.51%	28.49%	16.00%	100.0%
2009	51.48%	29.83%	18.68%	100.0%
2010	50.05%	29.36%	20.59%	100.0%
2011	56.98%	27.94%	15.09%	100.0%
2012	53.62%	29.94%	16.44%	100.0%
2013	58.05%	25.70%	16.24%	100.0%
2014	54.03%	29.04%	16.93%	100.0%
2015	52.08%	29.53%	18.40%	100.0%
2016	56.90%	29.21%	13.89%	100.0%
Average	54.68%	28.28%	17.04%	100.0%

Table 19: Summary of proposed allocation configuration of Alternative 2D-2 (includes Maryland), with examples using hypothetical coastwide quotas at 8.12 million lb and 14.00 million lb.

Quota Period	Allocation % (of annual coastwide commercial quota)	Measures	Example allocation (lbs) based on 8.12 million lb quota	Example allocation (lbs) based on 14.00 million lb quota			
Winter I (January 1- April 30)	54.68%	Coastwide	4,440,145	7,655,422			
Summer (May 1- October 31)	28.28%	State-specific	2,296,255	3,959,060			
<i>State-specific summer allocations</i>	ME		0.015%	ME	340	ME	586
	NH		0.000%	NH	0	NH	2
	MA		18.525%	MA	425,389	MA	733,429
	RI		21.538%	RI	494,571	RI	852,708
	CT		3.417%	CT	78,466	CT	135,287
	NY		17.779%	NY	408,243	NY	703,867
	NJ		28.429%	NJ	652,808	NJ	1,125,531
	DE		0.043%	DE	993	DE	1,711
	MD		4.171%	MD	95,782	MD	165,141
	VA		5.412%	VA	124,272	VA	214,263
NC	0.670%	NC	15,391	NC	26,536		
Winter II (November 1 - December 31)	17.04%	Coastwide	1,383,599	2,385,516			
Total	100%	--	8,120,000	14,000,000			

Between sub-alternatives 2D-1 and 2D-2, the timing of the seasonal quota periods is proposed to be the same. In addition, seasonal quota rollover provisions and the process for setting coastwide management measures is proposed to be the same. What would differ between the two options, based on whether or not Maryland was exempted, are the seasonal quota allocations and the state-by-state summer allocations. Since these are based on landings history from 1997-2016, the proposed sub-alternatives are based on analysis with (2D-2) and without (2D-1) data from the state of Maryland. Table 20 compares the differences in seasonal quota period and state summer period allocations under the two sub-options.

Table 20: Comparison of allocation differences between sub-alternatives 2D-1 and 2D-2.

	Alt. 2D-1: based on 1997-2016 landings without Maryland	Alt. 2D-2: based on 1997-2016 landings with Maryland	Absolute Difference
<i>Quota Period Allocations</i>			
Winter I	55.26%	54.68%	0.58%
Summer	27.65%	28.28%	0.63%
Winter II	17.10%	17.04%	0.06%
<i>State Summer Period Allocations</i>			
ME	0.02%	0.01%	0.01%
NH	0.00%	0.00%	0.00%
MA	19.33%	18.53%	0.80%
RI	22.48%	21.54%	0.94%
CT	3.57%	3.42%	0.15%
NY	18.55%	17.78%	0.77%
NJ	29.67%	28.43%	1.24%
DE	0.05%	0.04%	0.01%
MD	-- ^a	4.17%	--
VA	5.65%	5.41%	0.24%
NC	0.70%	0.67%	0.03%

^a Maryland would have an annual allocation of 2.03910% of the coastwide quota (and thus no specific seasonal allocation for the summer period quota).

5.3 Alternative Set 3: Landings Flexibility Framework Provisions

This alternative set considers whether to add "landings flexibility" policies to the list of issues in the Council's FMP that can be modified through a framework action. Framework actions are modifications to the Council's FMP that are typically (though not always) more efficient than a full amendment. While amendments may take several years to complete and address a variety of issues, frameworks can often be completed in 5-8 months and address one or a few issues in a fishery. Framework actions can only modify existing measures and/or those that have been previously considered in an FMP amendment. Because the Commission does not do framework actions and instead can address issues of this scope through FMP addenda, this alternative set does not apply to the Commission's FMP.

Landings flexibility, as described below, may allow for commercial vessels to land or possess summer flounder in states where they are not permitted at the state level. Landings flexibility differs from "safe harbor" agreements between some states, which are based on state level agreements and allow a state to accept landings from a vessel on a temporary basis under certain emergency situations (e.g., weather, mechanical breakdown, injured crew member). Landings flexibility, on the other hand, would be a broader policy that would require a state to accept vessels that do not necessarily meet state level permitting or landing license criteria, as described under alternative 3B below.

This action would not implement any landings flexibility policies at this time, but instead would simply allow these policies to be implemented via a future framework action (for the Council; with corresponding addendum from the Commission) rather than through an amendment process. **The impacts of any future framework action related to landings flexibility would be analyzed through a separate action**, which would include public comment opportunities and

documentation of compliance with all applicable laws. Depending on the proposed configuration of landings flexibility in a future action, **the level of analysis required may vary and an EIS may be required if impacts are expected to be significant.**

5.3.1 Alternative 3A: No Action/Status Quo

Under this alternative, no changes would be made to the framework provisions of the FMP. Broad coastwide landings flexibility would remain inconsistent with the current FMP, and any future programs of this type would likely have to be implemented through an amendment to the FMP. While the Commission may be able to implement coastwide landings flexibility through an addendum, doing so could create inconsistencies between the two FMPs. States would remain free to develop landings flexibility agreements through state-level agreements, provided that such agreements are consistent with other Council and Commission FMP requirements and would not require modification to the federal management measures.

5.3.2 Alternative 3B: Add Landings Flexibility as a Frameworkable Issue in the FMP

Under alternative 3B, “landings flexibility” policies for the commercial summer flounder fishery would be added to the list of frameworkable items in the summer flounder, scup, and black sea bass FMP. This would allow for landings flexibility policies to be implemented through future framework actions (for the Council) and FMP addenda (for the Commission), rather than through a more complex amendment process. **This alternative is primarily administrative in that it does not implement any landings flexibility policies, but simply modifies the way that landings flexibility policies may be implemented in the future.** A brief overview of what may be considered in a future framework action for these types of policies is provided here.

"Landings flexibility" means the ability to land or possess summer flounder in any state (or, in some configurations, any participating state) without requiring that vessel to be permitted in that state. The Council and Board's intent is to allow for consideration of multiple possible configurations of landings flexibility through future framework actions, including allowing vessels to land in any port/state, developing multi-state landings agreements, and/or allowing vessels to possess multiple state possession limits at one time for separate offloading. The specific details of how landings flexibility would work in practice would be determined at the time of a future framework action. No specific proposals for framework actions have been put forward at this time.

In its most commonly discussed form, landings flexibility would allow vessels with a federal summer flounder moratorium permit to commercially land summer flounder in any port of their choosing within the management unit, in any state, regardless of state level permits. This has been suggested as a means of addressing rising fishing costs, fuel use (for both environmental impact and cost reasons), increasing adaptability to market conditions, addressing safety concerns, adapting to a changing distribution of fish, and improving efficiency. It has been suggested that landings flexibility would reduce long steam times and operating costs associated with strict requirements to land fish in a specific state or states. With more flexibility in where they can offload fish, fishermen that fish farther from their home state could make multiple fishing trips before making the trip home.

Landings flexibility as previously discussed by the Council and Board is intended to work within the existing state-by-state quota system, as landings flexibility would not be necessary under a coastwide system (or "scup model" under alternative 2D). Some questions remain about how state quotas could be effectively managed if landings were open to any state/port. Quota transfers would

likely be required to properly attribute landed summer flounder amounts to the permit state rather than the state of landing. GARFO has indicated that it would likely be impossible to track landings at the individual permit/vessel level and attribute them to the correct state without a quota transfer, at least with the level of timeliness and accuracy required of in-season commercial management. Thus, properly assigning landings to the appropriate state would require quota transfers between states each time a vessel landed in a non-permitted state. If a vessel is permitted in multiple states, there would need to be a clear process to specify against which state's quota the landings should be counted (i.e., which state needs to participate in a quota transfer). Under a broad coastwide landings flexibility policy, **each state would be required to accept commercial vessels desiring to land summer flounder in that state**, and would likely be required to participate in the associated quota transfer.

Additional analysis under any future framework action would be needed to determine how state level trip limits and other state-specific measures would be enforced if any vessel could land in any state. Specifically, the Council and Board would need to specify if a vessel would be subject to the possession/trip limits and seasons of the state in which they land, or to those of the state in which they are permitted (the vessel's "home state").

5.4 Considered but Rejected Alternatives

Since the initiation of this amendment, the Council and Board have considered a range of different modifications to commercial fishery management for summer flounder. As described in section 4.5, a broad initial range of issues was progressively narrowed until the Council and Board agreed on a targeted list of issues to focus on through this action, corresponding to the purpose and need statements described in section 4.1. To address these need statements, many approaches were considered. Concepts or options that were substantially discussed by the Council and Board, but rejected from further consideration, are described below for federal permit requalification (section 5.4.1), commercial allocation (section 5.4.2), and landings flexibility (section 5.4.3).

5.4.1 Rejected Permit Requalification Options

The Council and Board originally approved a broader range of sub-alternatives under alternative 1B, but ultimately narrowed the range to the seven presented in section 5.1.2. As of August 2017, the Council and Board had proposed a wider range of twenty sub-options based on a combination of four different time period options and five different landings thresholds. The four time period options and five landings thresholds options were recommended by the Demersal Committee at their July 2017 meeting, based on an initial staff analysis, with some modifications discussed at the meeting. The intent of the original range was to provide a wide variety of time frame options (options for focusing on recent years and options with a focus on the longer time series since permits were required) and a variety of landings threshold options (focusing on eliminating only rarely-used permits vs. more broadly defining latent effort).

However, when the Council and Board first considered this range of options in August 2017, analysis was not available at the time that accurately identified how many moratorium rights holders would be impacted by each of these combinations. In December 2017, after reviewing subsequent analysis showing the number of MRIs that would be impacted, they narrowed the range to the seven sub-options identified in section 5.1.2 of this document, in order to simplify the public hearing process and amendment analysis by eliminating options that would be largely redundant

in terms of their impacts. Each sub-option is described in Table 21 with an indication of whether it was retained in Alternative 1B, or rejected from further analysis.

Table 21: Federal moratorium permit requalification options (landings threshold and time period combinations) considered by the Council and Board, with December 2017 outcomes of narrowing the range of alternatives.

		Re-Qualification Time Periods			
		Period 1 (August 1, 1994-July 31, 2014; 20 years)	Period 2 (August 1, 1999-July 31, 2014; 15 years)	Period 3 (August 1, 2004-July 31, 2014; 10 years)	Period 4 (August 1, 2009-July 31, 2014; 5 years)
Landings Thresholds	≥1 lb in any one year	Eliminated	Eliminated	Retained: Alt. 1B-4	Retained: Alt. 1B-2
	≥1 lb in 20% of years in time period	Retained: Alt. 1B-6	Eliminated	Eliminated	Eliminated
	≥1 lb in 40% of years in time period	Eliminated	Eliminated	Eliminated	Eliminated
	≥1 lb in 60% of years in time period	Eliminated	Eliminated	Eliminated	Eliminated
	>1000 lbs Total	Retained: Alt. 1B-7	Retained: Alt. 1B-5	Retained: Alt. 1B-3	Retained: Alt. 1B-1

More information about how the range was narrowed can be found the October 2017 staff memo for the Demersal Committee available at: <http://www.mafmc.org/s/Demersal-Cttee-Permits-and-Landings-Flex-Memo-Oct-2017.pdf>.

In addition, the Demersal Committee considered two conceptual options for revising the moratorium permit system that were not selected for further analysis: creating a tiered permit system based on landings and/or effort criteria, and creating a tiered permit system based on gear types. It was thought that tiered systems could help the Council and Board tailor management approaches to different components of the fishery (e.g., those vessels heavily relying on the directed fishery vs. vessels that participate on a more incidental or infrequent basis). At their July 2017 meeting, the Committee moved to classify these options as "considered but rejected," which was supported by the full Council and Board at their August 2017 meeting. The Council and Board chose to eliminate gear-based permits due to the overwhelming majority of the fishery using trawl gear, and chose to eliminate other tiered permit options due to the complications that could arise from trying to define and delineate different tiers of the commercial summer flounder fishery. Requalification of the existing single tier permits was deemed to be the most appropriate route for achieving the purpose and need for this issue.

5.4.2 Rejected Commercial Allocation Options

For commercial allocation issues, the Council and Board considered several conceptual ideas that were not adopted as amendment alternatives, as well as some alternate configurations of ideas that became the alternatives listed in section 5.2 of this document.

Conceptual allocation policies that were not approved in the range of alternatives were proposed at various stages of initial amendment development by scoping commenters, staff, individual Council and Board members, and/or management partners. Most of these ideas did not yet have a clearly developed rationale or proposed configuration, as they were proposed for discussion of feasibility and for consideration of whether they would address the purpose and need of the amendment. The main ideas considered in initial stages of amendment development included:

- A simple revised base year period for commercial landings to revise existing state by state quotas. This alternative was not selected due how highly correlated landings in any given recent year are likely to be with the existing state allocations. The percentage of annual landings by state are typically very close to the state allocation in most states and years; thus, almost any base year range since implementation of Amendment 2 (1993) would result in very similar allocations to those currently implemented. Many Council and Board members wanted to pursue options that were more of a departure from the current 1980-1989 landings basis.
- A "best years" system based on a state's highest landings years over a certain time period to revise existing state by state quotas. This option was rejected for similar reasons to the one above. Best years are likely to reflect that state's allocation. In addition there would likely need to be stipulations regarding not using years in which overages occurred, to avoid rewarding states for years where they exceeded their quota. A best years system would thus not result in much of a change from the current allocation, similar to the revised base year period idea above.
- Coastwide quota with seasonal periods (trimester or bimonthly). This idea was rejected because the Council and Board identified alternative 2D (the "scup model") as a similar option that is preferable to a year-round coastwide system due to the ability of states to manage their own quota when summer flounder are inshore in the summer. A year-round coastwide system would likely require dividing the quota into many short periods to ensure access to the resource throughout the year and for different fishery participants.
- Regional coastwide quota systems were considered but rejected due to a lack of clear basis for dividing the management unit into commercial regions. In addition, management would likely still need to be at the state level, but instead of individual states, measures and quota monitoring would be cooperatively handled by multiple states working together. This could present an administrative burden and require increased time and resources spent coordinating stakeholder preferences, data, and enforcement across multiple states.
- Quota allocations by permit category were considered but would have required that the Council and Board implement tiered permit systems through alternative set 1. The tiered permit was rejected from further consideration; therefore, allocations by permit category are not possible.

Within the existing range of alternatives, several configurations of options were not adopted in the final version:

- The Demersal Committee considered other quota triggers for modified commercial allocation under alternative 2C (Figure 8). Primarily this included the staff-recommended time series average quota (1993-2018) of 11.80 million pounds, but other triggers were raised during the November 2017 Demersal Committee discussion. The Committee

recommended rejecting the staff-recommended time series average quota of 11.80 million pounds, as this was less likely to have any near-term impact on the quotas under this alternative, and the Committee wanted to pursue a slightly lower trigger that was more likely to be reached in the coming fishing years. The Committee recommended, and the Council and Board approved, the two sub-options described in section 5.2.3.

- Also for alternative 2C, the Committee considered a proposed version of the alternative that would have the states of Maine, Delaware, and New Hampshire splitting an entire "state share" of additional quota beyond the quota trigger. The Committee determined that this introduced a risk of speculator behavior in these states, which do not currently have directed fisheries for summer flounder. If the quota were raised substantially in these states, new effort may be introduced, which is not the intention of this alternative set.
- As described in section 5.2.4, for the "scup model" (alternative 2D), the Council and Board reviewed versions of the alternative's configuration that included the month of October in the Winter II period instead of the summer period. As described in section 5.2.4, this configuration was not adopted in the range of options due to advisory panel comments and initial analysis describing the characteristics of the fishery in the month of October compared to the surrounding months. Additional information on this decision can be found in APPENDIX B.

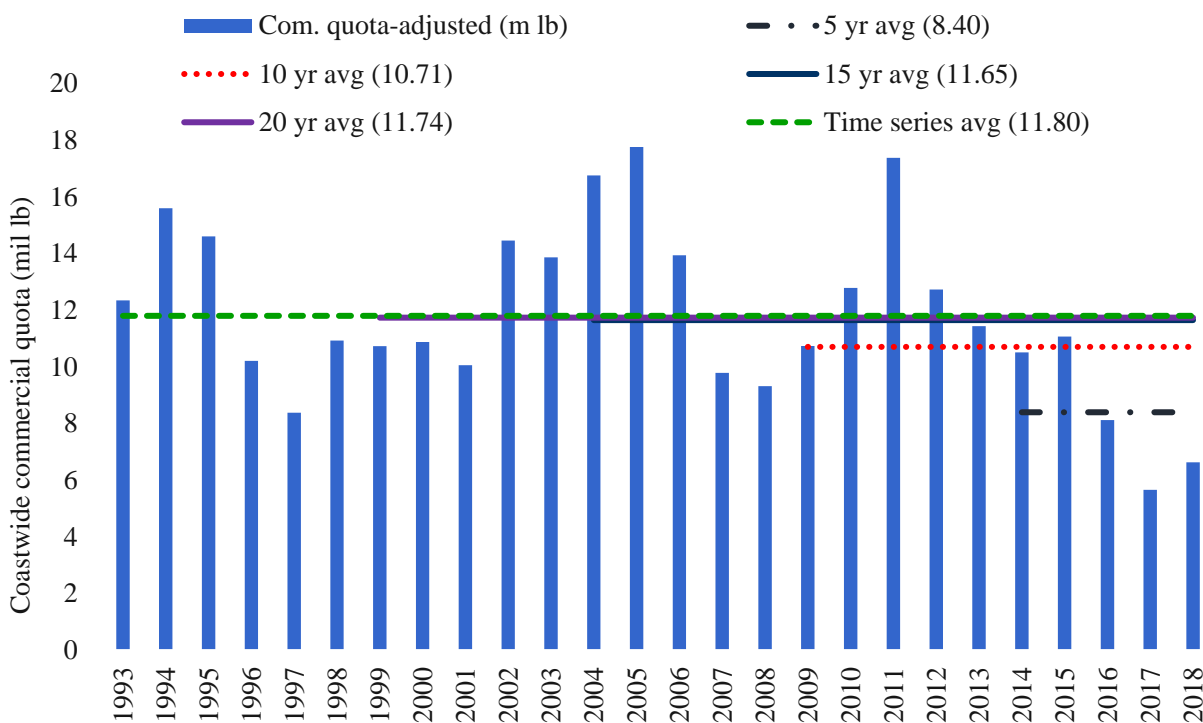


Figure 8: Options for commercial quota triggers considered by the Demersal Committee.

5.4.3 Rejected Near-Term Options for Landings Flexibility Policies

The Council and Board originally considered landings flexibility policies for implementation directly through this action (rather than specifying that these policies could be implemented

through a future framework action, as alternative 3B proposes to do). In August 2017, the Council and Board approved a Demersal Committee motion to: "recommend that the Council remove landings flexibility as an option but include landings flexibility as a frameworkable option in the FMP, and send a letter to the states encouraging further development of landings flexibility policies and agreements at the state level including allowing multiple state possession limits with appropriate permits."

The rationale behind this recommendation was to encourage individual states to come up with their own landings flexibility agreements, which should be more flexible and customizable than a mandatory coastwide landings flexibility policy. However, the Council and Board wanted to maintain the option to develop coastwide landings flexibility in the future, in the event that state agreements are not pursued or are not effective. Thus, they moved to pursue an alternative to add landings flexibility to the list of frameworkable issues in the FMP.

6.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

The affected environment consists of those resources expected to experience environmental impacts if the actions under consideration in this amendment are implemented. The affected environment consists of several Valued Ecosystem Components (VECs), including components of the environment that could be affected by the management measures being considered in this amendment. These following VECs are described in the sections below:

1. The **managed resources** (summer flounder; section 6.1),
2. **Non-target species** (including black sea bass, scup, and other managed species that may interact with the summer flounder fishery; section 6.2),
3. The **physical environment**, including Essential Fish Habitat (EFH; section 6.3),
4. **Protected resources**, including species and habitats protected under the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA; section 6.4), and
5. The **human (socioeconomic) environment**, including commercial fisheries likely to be impacted by this action (section 6.5).

6.1 TARGET SPECIES (SUMMER FLOUNDER)

This section describes the fishery resource managed under this FMP that is the focus of this action, i.e., the summer flounder resource. Although scup and black sea bass are managed under the same FMP as summer flounder, these species would not be affected by the proposed measures in this action, and therefore are described in section 6.2 as non-target species, along with other species that are commonly caught or targeted alongside summer flounder.

This section describes summer flounder stock definition (section 6.1.1), stock status (section 6.1.2), biological characteristics and ecological relationships (section 6.1.3), and stock distribution and center of biomass (section 6.1.4).

6.1.1 Stock Definition

Summer flounder, *Paralichthys dentatus*, is a demersal flatfish that occurs in the western North Atlantic from the southern Gulf of Maine to South Carolina. The geographical range of the summer flounder encompasses the shallow estuarine waters and outer continental shelf from Nova Scotia to Florida. The center of abundance of the stock lies within the Middle Atlantic Bight from Cape Cod, Massachusetts, to Cape Hatteras, North Carolina (Packer et al. 1999).

Summer flounder is managed and assessed as a single stock. In the past, there have been several attempts to identify separate stocks of summer flounder that may exist throughout its range. The stock definition provided by Wilk et al. (1980) of a unit stock extending from Cape Hatteras north to New England was used in the most recent benchmark assessment (NEFSC 2013), as well as in previous assessments. A consideration of summer flounder stock structure incorporating tagging data concluded that most evidence supported the existence of stocks north and south of Cape Hatteras, with the stock north of Cape Hatteras possibly composed of two distinct spawning aggregations, off New Jersey and Virginia-North Carolina (Kraus and Musick 2001).

The current assessment stock unit is consistent with the conclusions of Kraus and Musick (2001). The management unit within the FMP is summer flounder in US waters in the western Atlantic Ocean from the US-Canadian border southward to the southern border of North Carolina. The management unit is consistent with the conclusions a summer flounder genetics study that revealed no population subdivision at Cape Hatteras (Jones and Quattro 1999).

6.1.2 Stock Status

Summer flounder was under a rebuilding plan from 1993 through 2011. An F-reduction schedule was first put in place in 1993 through Amendment 2, and this schedule was modified via Amendment 7. After the MSA was reauthorized in 1996 with time certain rebuilding requirements and required rebuilding plans, Amendment 12 (1999) started the ten-year rebuilding clock for summer flounder for 2000-2010. Following the 2007 reauthorization of the MSA, which required the implementation of ACLs and AMs, the rebuilding deadline was extended to 2013. However, the summer flounder stock was declared rebuilt in the fall of 2011, based on the most recently modeled year, 2010.

The last peer-reviewed benchmark stock assessment was conducted in the summer of 2013 at the Stock Assessment Workshop/Stock Assessment Review Committee (SAW/SARC 57). The details of the revised biological reference points for summer flounder are described in that assessment report (NEFSC 2013). Overfishing for summer flounder is defined to occur when the fishing mortality rate (F) exceeds the threshold fishing mortality rate of $F_{MSY\ PROXY} = F_{35\%} = 0.309$ (CV=15%). The summer flounder stock is overfished when the biomass falls below the minimum biomass threshold, identified in SARC 57 as $\frac{1}{2} SSB_{MSY} = 31,197$ mt (68.8 million lbs; CV = 13%; NEFSC 2013).

The most recent update to the SARC 57 model was completed in June 2016, using data through 2015 (Terceiro 2016). Results from the 2016 assessment update indicate that the summer flounder stock was not overfished, but overfishing was occurring in 2015 relative to the SSB and F biological reference points from the 2013 benchmark assessment. Fishing mortality on fully selected age 4 fish was estimated to be 0.390 in 2015, 26% above the 2013 SAW 57 $F_{MSY\ PROXY} = F_{35\%} = 0.309$ (Figure 9). Spawning stock biomass (SSB) was estimated to be 79.90 million lb (36,240 mt) in 2015, about 58% of $SSB_{MSY} = 137.6$ million lb (62,394 mt), and 16% above the overfished threshold of $\frac{1}{2} SSB_{MSY\ PROXY} = \frac{1}{2} SSB_{35\%} = 68.78$ million lb (31,197 mt; Figure 10).

The 2016 update shows that recruitment of age 0 fish was below the time series average (41 million fish at age 0; 1982-2015) each year from 2010 through 2015. Recruitment has also been overestimated in several of the most recent years. For example, in the 2015 update, 2014 recruitment appeared average, but has since been adjusted downward with the most recent update. Recruitment in 2015 is also estimated to be below average at 23 million fish.

The 2016 assessment update indicates that while catch in recent years has not been substantially over the ABCs, the projected fishing mortality rates have been exceeded and projected spawning stock biomass has not been achieved. For the past several years the assessment has shown retrospective patterns in fishing mortality rates, spawning stock biomass, and recruitment. In this case, the assessment in recent years has been underestimating fishing mortality rates, overestimating spawning stock biomass, and overestimating recruitment. In other words, when the assessment is updated, it reveals that past projections of fishing mortality rates have been exceeded, while projections of spawning stock biomass and recruitment have not been reached. This result is likely in part due to below-average recruitment to the stock for year classes from 2010-2015, and could also be due to mortality that is not being properly accounted for the assessment. Nearly all fishery-independent federal and state survey indices (including recruitment indices) have been decreasing from their most recent peaks over the 5-7 years prior to the 2016 update, some substantially.

Reports on stock status, including annual assessment and reference point update reports, Stock Assessment Workshop (SAW) reports, Stock Assessment Review Committee (SARC) reports, are available online at the Northeast Fisheries Science Center (NEFSC) website: <http://www.nefsc.noaa.gov/>. A description of the history of past summer flounder stock assessments can be found in Terceiro (2001) and Terceiro (2011).

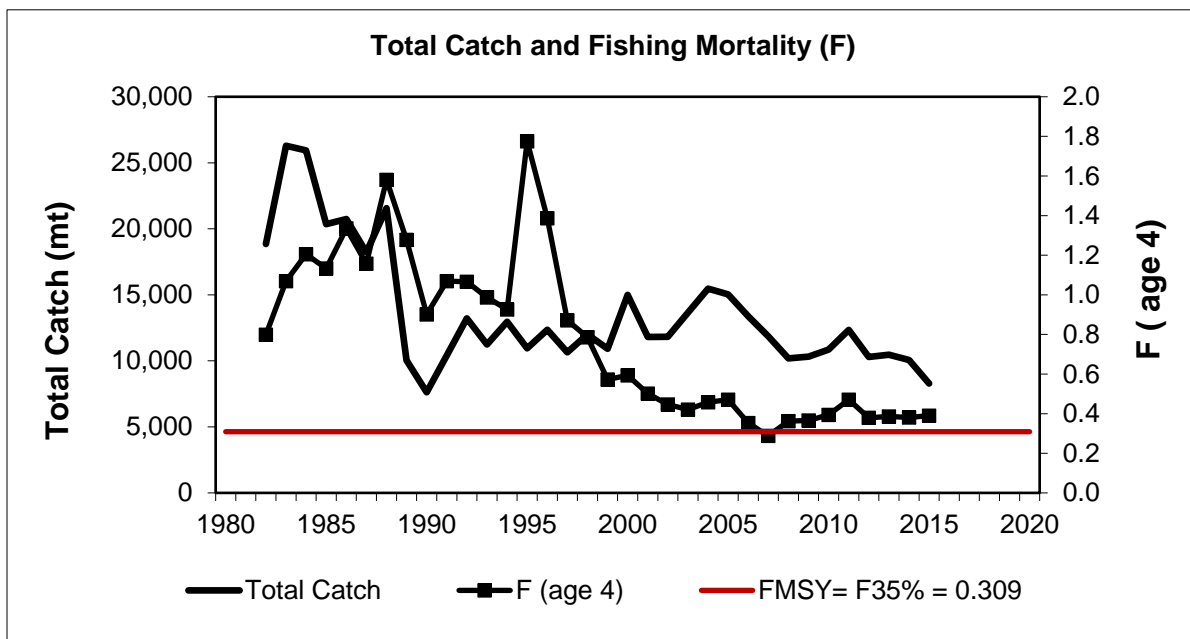


Figure 9: Total fishery catch and fully-recruited fishing mortality (F, peak at age 4) of summer flounder, 1982-2015. The horizontal dashed red line is the 2013 SAW 57 fishing mortality threshold reference point proxy.⁴

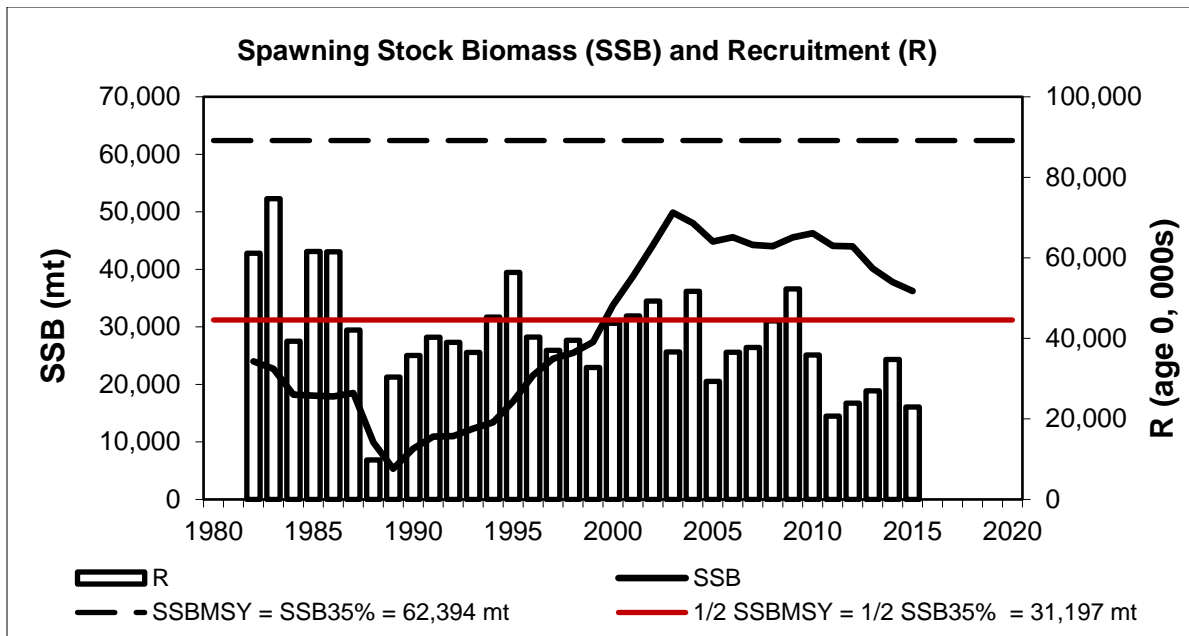


Figure 10: Summer flounder spawning stock biomass (SSB; solid line) and recruitment at age 0 (R; vertical bars) by calendar year, 1982-2015. The horizontal dashed line is the 2013 SAW 57 biomass target reference point proxy, the horizontal red line is the biomass threshold reference point proxy.⁴

6.1.3 Biological Characteristics and Ecological Relationships

6.1.3.1 Seasonal Migrations

Summer flounder exhibit strong seasonal inshore-offshore movements. Adult and juvenile summer flounder normally inhabit shallow coastal and estuarine waters during the warmer months of the year and remain offshore during the fall and winter.

While information on finer-scale migration patterns is generally unavailable, historical tagging studies suggest that depending on the season and release location, general patterns of "north-south," "east-west," and "inshore-offshore" movements are possible. Murawski (1970) reported that fish tagged from New Jersey in the 1960s moved from inshore waters to offshore wintering grounds, with dispersion to both the south toward Virginia and to the north-east toward southern New England. Lux and Nichy's (1980) tagging results from the 1960s indicated that fish from inshore Southern New England (SNE) waters tagged in September had a broad range of movement, including east and offshore to Veatch Canyon south of Massachusetts, south and offshore to Block and Hudson canyons, and offshore as far southwest as Cape May NJ. Finally, Monaghan's tagging work (1992) on North Carolina fish in the early 1990s showed that fish tagged north of Hatteras mostly moved offshore and north as far as northern New Jersey. Fish tagged south of Hatteras moved to the southwest as far as the North Carolina-South Carolina border.

6.1.3.2 Spawning, Fecundity, and Reproductive Strategy

Summer flounder spawn during the fall and winter as they migrate offshore or are at their wintering grounds. Smith (1973) found that spawning starts in mid-September between southern New England and New Jersey. As the season progresses spawning moves southward, and by October

spawning takes place nearly as far south as Chesapeake Bay. Spawning has been reported to continue into March (Morse 1981). Spawning habitat occurs over the entire shelf between Cape Cod, Massachusetts, and Cape Lookout, North Carolina.

Morse (1981) documented that summer flounder are serial spawners and that egg batches are continuously matured and shed during a protracted spawning season. Morse (1981) also reported a mean maturity index that increased rapidly from August to September, peaked in October- November, then gradually decreased to a low in July. The wide range in the maturity indices during the spawning season indicates nonsynchronous maturation of females and a relatively extended spawning season.

Fecundity of summer flounder is relatively high, ranging from 463,000 to 4,188,000 eggs for fish between 14 inches and 27 inches (Morse 1981). Fertilized eggs are buoyant, floating at or near the surface. Smith (1973) reported that the heaviest concentrations of eggs and larvae were found between Long Island and Cape Hatteras; most eggs were taken within 17 miles of shore and larvae were most abundant 12 to 45 miles from shore. Larvae were found in the northern part of the Middle Atlantic Bight from September to February, and in the southern part from November to May. Mid-Atlantic Region Monitoring and Assessment Program (MARMAP) survey data (Able *et al.* 1990) indicate that peak egg abundance occurs in October through December with October and November being the two months when most eggs were collected.

The reproductive strategy of summer flounder tends to maximize reproductive potential and avoid catastrophe. The strategy is a combination of extended spawning season with variable duration, early maturation (age 1 or 2), high fecundity, serial spawning, and extensive migrations across the continental shelf during spawning. The half year spawning season reduces larval crowding and decreases the impact of predators and adverse environmental conditions on egg and larval survival. The migration pattern disperses the eggs over large areas of the shelf and probably aids in maintaining spawning fish in areas where bottom temperatures are between 54° and 66° F (Smith 1973). The October/November spawning peak coincides with the breakdown of thermal stratification on the continental shelf and the maximum production of autumn plankton which is characteristic of temperate ocean waters of the northern hemisphere. Thus, the timing of peak spawning assures a high probability of adequate larval food supplies (Morse 1981).

6.1.3.3 Age Structure, Growth, and Maturity

Historical studies of summer flounder age and growth include those of Poole (1961), Eldridge (1962), Powell (1974), Smith and Daiber (1977), Henderson (1979), and Shepherd (1980). Multiple summer flounder ageing workshops have been held over the years (1980, 1990, 1999, 2014, and 2017) to reconcile different methods of ageing, parts for ageing (scales vs. otoliths), and evaluate agreement between ageing methods and readers, as described in NEFSC 2013. Both NEFSC survey and commercial samples were completely transitioned to otoliths beginning in 2015.

For the 2013 benchmark assessment, total Northeast Region commercial fishery landings and discards at age, North Carolina winter trawl fishery landings and discards at age, and MRFSS/MRIP recreational fishery landings and discards at age totals were summed to provide a total fishery catch at age matrix for 1982-2012 (Figure 11). The percentage of age 3 and older fish in the total catch in numbers has increased during the last several decades from only 4% in 1993 to 72% in 2008, 68% in 2009, 69% in 2010, and 80% in 2011.

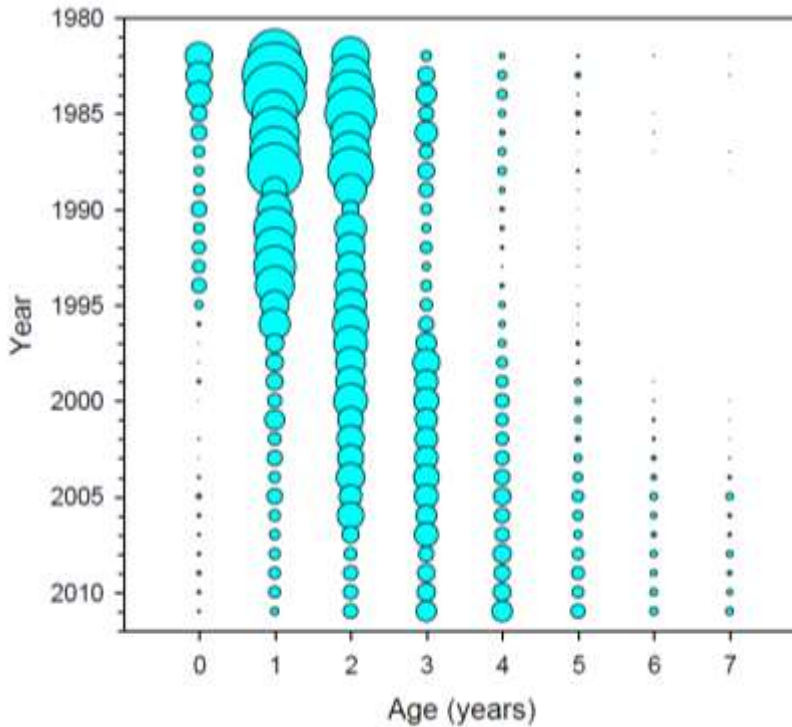


Figure 11: Total fishery catch at age for summer flounder, 1982-2012, from the 2013 benchmark stock assessment (NEFSC 2013).

The length-weight relationship for summer flounder was described by Lux and Porter (1966), Wigley et al. (2003), and various benchmark assessments for summer flounder over the years. These studies have shown that there are both seasonal and sexual differences in the length-weight relationship. This difference between the sexes was also noted by Smith and Daiber (1977), Eldridge (1962), and Wilk et al. (1978).

NEFSC trawl survey data for 1976-2016 for males, females, and sexes combined indicates that female summer flounder attain a significantly larger asymptotic size than males (Figure 12).

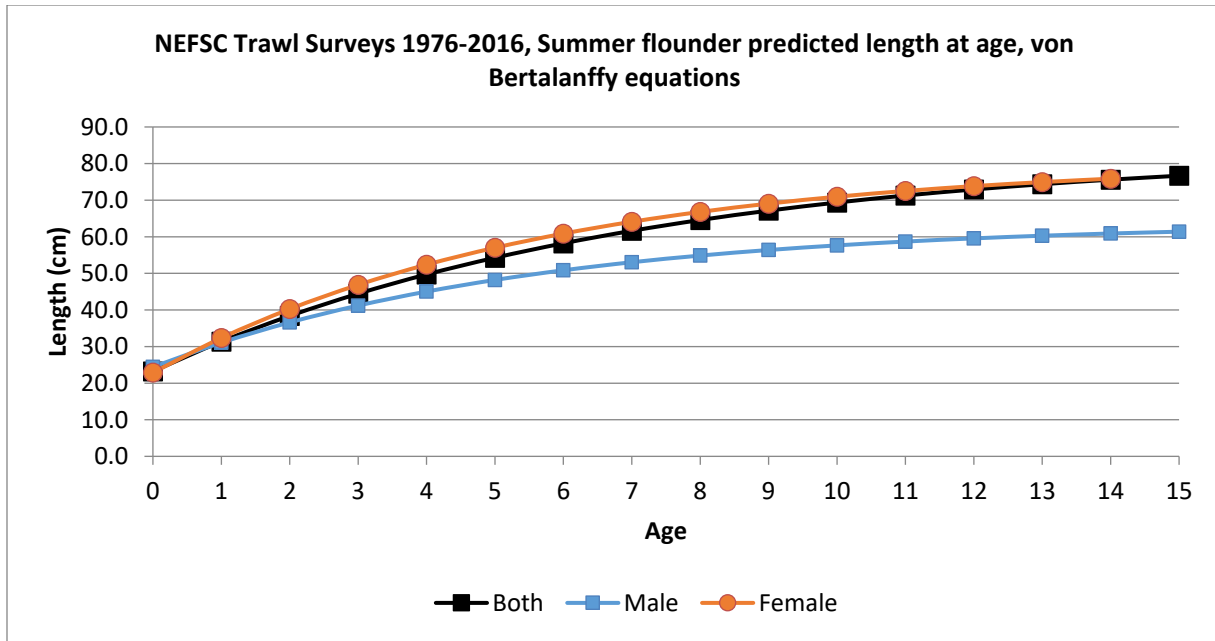


Figure 12: Predicted length at age from von Bertalanffy equations parameters estimated from NEFSC trawl survey data for 1976-2016. Maximum observed age for males is age 15; for females is age 14.

Preliminary work for the 2018 benchmark assessment examined NEFSC winter, spring and fall trawl survey sample data for trends in mean length and weight by sex and age. The winter and spring series indicate no strong trend in the mean lengths of ages 1-2 for sexes combined. For ages 3-6, there is an increasing trend in mean length from 1976 to about 1990, and a decreasing trend since then. In the fall series, there is no obvious trend for ages 0-1, but there are relatively strong decreasing trends in mean length for combined sexes for ages 2 and older since the mid-1990s. In general, similar trends are observed for mean weight, with a decreasing trend evident for ages 3 and older. Trends in the mean weights at age in the total, combined sexes fishery catch (landings plus discards) exhibit a comparable pattern, with strongest declining trends since the 1990s for ages 3 and older.

Also for preliminary 2018 benchmark assessment work, the median length at maturity was estimated as 26.1 cm (10.3 inches) for male summer flounder, 29.8 cm (11.7 inches) for female summer flounder, and 27.0 cm (10.6 inches) for the sexes combined.

The median age of maturity for summer flounder was determined to be 1.13 years for males, 1.42 years for females, and 1.23 years for both sexes combined (i.e., fish about 13-17 months old). These estimates are comparable to those in previous assessments. Most fish are sexually mature by age 2, and fish of age 3 and older are generally all very close to 100% mature. Estimated maturity ogives by year and sex suggest a long term, decreasing trend in proportion mature at ages 0 and 1 for males and females, and for females at age 2 (NEFSC 2013). The 1982-2016 mean percent observed maturities at age (unweighted, simple arithmetic average of annual values at age) are 42% at age 0, 95% at age 1, 99% at age 2, and 100% at ages 3 and older for males; 26% at age 0, 83% at age 1, 96% at age 2, and 100% at ages 3 and older for females; and 36% at age 0, 90%

at age 1, 98% at age 2, and 100% at ages 3 and older for sexes combined (M. Terceiro, pers. comm., Nov. 2017).

6.1.3.4 Sex Ratio

Work for the 2018 benchmark assessment examined NEFSC winter, spring and fall trawl survey raw sample data for trends in sex ratio by season and age, expressed as the proportion of females at age. The spring and fall series have sufficient data for the compilation beginning in 1976; the winter survey was conducted from 1992-2007. In general, the data show no or minimal trends in the proportion female over time for ages 0 and 1, but show a generally decreasing trend in the proportion female for ages 2 and older. In addition to the raw survey data, the NEFSC stratified mean abundance indices (numbers per tow) were calculated for the winter (1992-2007), spring and fall (1976-2016) series. As in the raw sample data, the sex ratio in the NEFSC stratified indices has changed over the last decade, with generally decreasing proportions of females at ages 2 and older (M. Terceiro, pers. comm., Nov. 2017).

6.1.3.5 Feeding, Prey, and Predators

Summer flounder are opportunistic feeders; their prey includes a variety of fish and crustaceans. The NEFSC trawl survey foods habits database contains information from 18,862 summer flounder stomachs sampled on 5,365 tows, over 70% of which were found to be empty. ‘Other fish’ (fish which could not be identified to family) were found in about 10% of the stomachs, followed by squids (6%), decapod shrimp (4%), ‘animal remains’ (3%; partially digested stomach contents), anchovies (2%), and other gadids, porgies, mysids, and other small crustaceans. The data were summarized into 4 multi-year blocks to look for temporal patterns. The frequency of ‘Other fish’ and decapod shrimp consumption by summer flounder decreased by about 50% over the time series, while the frequency of consumption of squid slightly increased. The frequency of consumption of anchovies peaked in the 1980s. The calculation of total absolute consumption of prey by summer flounder has not been attempted (NEFSC 2013).

Previous studies have inferred that larval and postlarval summer flounder initially feed on zooplankton and small crustaceans (Peters and Angelovic 1971, Powell 1974, Morse 1981, Timmons 1995). Food habits studies on late larval and juvenile estuarine summer flounder reveal that while they are opportunistic feeders and differences in diet are often related to the availability of prey, there also appears to be ontogenetic changes in diet. Smaller flounder (usually less than 4 inches; 100 mm) seem to focus on crustaceans and polychaetes while fish become a little more important in the diets of the larger juveniles (MAFMC 2002).

Adult flounder are most active during daylight hours and may be found well up in the water column as well as on the bottom (Olla et al. 1972). Included in their diet are: windowpane, winter flounder, northern pipefish, Atlantic menhaden, bay anchovy, red hake, silver hake, scup, Atlantic silverside, American sand lance, bluefish, weakfish, mummichog, rock crabs, squids, shrimps, small bivalve and gastropod molluscs, small crustaceans, marine worms and sand dollars (NEFSC 2013; Packer et al. 1999, MAFMC 2002).

The NEFSC trawl survey foods habits database includes summer flounder as a prey item in 65 predator stomachs over the period 1973-2011. Spiny dogfish was the predator in 35 cases (54%), followed by monkfish (11 cases, 17%), winter skate (7 cases, 11%). and bluefish (4 cases, 6%), with other fish species accounting for the other 9 cases and 12%, including 1 case (2%) of summer flounder cannibalism. All of the natural predators of adult summer flounder are not fully

documented, and these data are insufficient to calculate total absolute predator consumption of summer flounder (NEFSC 2013).

6.1.3.6 Mortality

The 2008 SAW 47 assessment assumed a natural mortality rate (M) of 0.20 for females and 0.30 for males. A combined sex M-schedule at age was developed by assuming these initial M rates by sex, an initial proportion of females at age 0 of 40% derived from the NEFSC Fall survey indices by age and sex, and population abundance decline over time at the sex specific M rates. The final abundance weighted combined sex M-schedule at age ranged from 0.26 at age 0 to 0.24 at age 7+, with a mean of 0.25 (NEFSC 2008). This M-schedule was retained in the subsequent 2009-2016 benchmark and updated assessments (NEFSC 2013; Terceiro 2012, 2015, 2016).

Fishing mortality (F) on fully selected age 4 summer flounder ranged between 0.799 and 1.775 during 1982-1996 and then decreased from 0.871 in 1997 to 0.288 in 2007. Since 2007 the fishing mortality rate has increased and was 0.390 in 2015, 26% above the 2013 SAW 57 FMSY proxy = $F_{35\%} = 0.309$ (see Figure 9). The 90% confidence interval for F in 2015 was 0.292 to 0.490 (Terceiro 2016).

6.1.4 Summer Flounder Distribution and Center of Biomass

As described in section 6.1.1, the geographical range of the summer flounder encompasses the shallow estuarine waters and outer continental shelf from Nova Scotia to Florida, with the center of abundance lying within the Middle Atlantic Bight from Cape Cod, Massachusetts, to Cape Hatteras, North Carolina. The management unit is summer flounder in US waters in the western Atlantic Ocean from the US-Canadian border southward to the southern border of North Carolina.

In recent years, emerging evidence has indicated that summer flounder have experienced changes in distribution and/or center of biomass relative to recent decades, with the changes generally described as a northward/eastward shift in biomass. Describing distribution shifts is complicated, as multiple studies have used different methods to evaluate summer flounder distribution changes and each have characterized these changes somewhat differently, as described below. In addition, it can be difficult to determine the driving factors behind distribution changes, given the challenge in distinguishing between the effects of climate change related drivers, stock rebuilding, and/or other factors such as regional fishing pressure or habitat impacts. Bell et al. (2015) notes that understanding the mechanisms regulating species distribution should be considered as part of any potential change to the quota allocation system. An overview of information on summer flounder distribution changes and potential explanatory factors is provided below.

Nye et al. (2009) evaluated summer flounder distributional changes and concluded that there has been a significant change in the maximum latitude for summer flounder. This study analyzed trends from 1968 to 2007 in mean center of biomass, mean depth, mean temperature of occurrence, maximum latitude, minimum latitude, and area occupied for 36 fish stocks in the Greater Atlantic region. Overall, 24 of the 36 stocks showed statistically significant changes in at least one of these metrics, many of them exhibiting a poleward shift in the center of biomass. For summer flounder, no significant changes were found in the center of biomass or area occupied, but there was an observed significant change in maximum latitude (0.029 degrees latitude per year). Nye et al. conclude that this provides “preliminary evidence that the range of summer flounder, also termed a ‘sedentary’ species, has expanded over time, that its abundance increased, and that the center of biomass was displaced poleward within the survey area.”

Nye et al. (2009) did not, however, investigate the effects of size structure or fishing mortality on distributional response; thus, the extent that these results are confounded with or explained by fishing mortality decreases from the late 1980s to the early 2010s is not addressed. The authors did find a close relationship between species abundance and area occupied, hypothesizing that changes in abundance may manifest more in the total area occupied by each species, while changes in the center of biomass may be more in response to changes in environmental conditions.

Bell et al. (2015) examined the distributions of summer flounder using NEFSC trawl data to determine if the center of biomass along-the continental shelf had changed over time and if these changes were attributed to temperature changes or fishing pressure (via changes in overall abundance and/or fishing related changes in length structure of the stock). The authors note that shifts in distribution can be driven by habitat and environmental factors, when fish attempting to remain within the best possible habitat conditions by migrating to more optimal environments and/or declining in numbers in less ideal environments. Range shifts can also be caused by simple changes in overall abundance, in that when there are less individuals of a particular species, those fish tend to occupy the highest value habitat. Population increases can lead to expansion into inferior habitat to avoid increased competition in ideal habitats. Finally, fishing mortality can affect distribution through changes in length-age structure of a population, by removing larger individuals which may tend to be located at higher latitudes.

Bell et al. (2015) used NEFSC bottom trawl survey data to examine changes in along-shelf biomass from 1972-2008, finding that summer flounder showed a significant northward trend in the fall, but no change in distribution in the spring. Interannual changes in the along-shelf center of biomass for summer flounder for both the spring and the fall showed a significant relationship with the interannual changes in mean length, but not with temperature or overall abundance. The authors provide evidence that larger summer flounder tend to occupy habitat further north, meaning that as the age structure of the population has expanded, the proportion of larger fish in the population has increased and the center of stock biomass in weight has thus shifted north.

The trends noted are particularly pronounced since the early 1990s, shortly after the population reached historic lows and had a severely truncated age structure. While evidence for other species (e.g., black sea bass and scup) suggests that temperature is a significant driver of distribution shifts, this study did not support this conclusion for summer flounder. This study also found no significant change in along-shelf distance occupied, suggesting that a range expansion does not appear to provide a strong explanation for distribution changes. Bell et al. suggest that a change in the length-age structure, driven by population recovery caused by reduced fishing mortality rates over time (see Figure 9, section 6.1.2), is the main driver of interannual shifts in summer flounder distribution.

The 2013 summer flounder benchmark assessment (SAW/SARC 57) describes similar conclusions. The assessment report notes that a progressive northward shift in distribution is evident with increases in length. Both spring and fall NEFSC trawl surveys show an increase in the average along-shelf position of summer flounder with increasing size. The average annual along-shelf center of biomass increased from the late 1960s to mid-1980s, then declined to the mid-1990s before reaching high levels again around 2007. Length-predicted along-shelf center of biomass declined from the 1960s to early 1990s, then increased until around 2008 and subsequently declined slightly. Larval distribution changed little throughout the time series, while mature adult distributions substantially shifted northward.

The OceanAdapt web portal, a collaboration between NMFS and the Pinsky Lab of Rutgers University, also provides information about the impacts of changing climate and other factors on species distribution. This website hosts an annually updated database of scientific surveys in the United States and provides tools for exploring changes in marine fish and invertebrate distributions. For the indicators displayed on this website, a mean location (the centroid) is calculated for each species in each year of each survey, after the surveys have been standardized to a consistent spatial footprint through time. The centroid is the mean latitude and mean depth of catch in the survey, weighted by biomass. Figure 13 shows the centroid latitude for summer flounder over time based on NEFSC trawl survey data, indicating that the center of survey biomass for summer flounder has shifted northward over time (see Pinsky et al. 2013 and <http://oceanadapt.rutgers.edu/>).

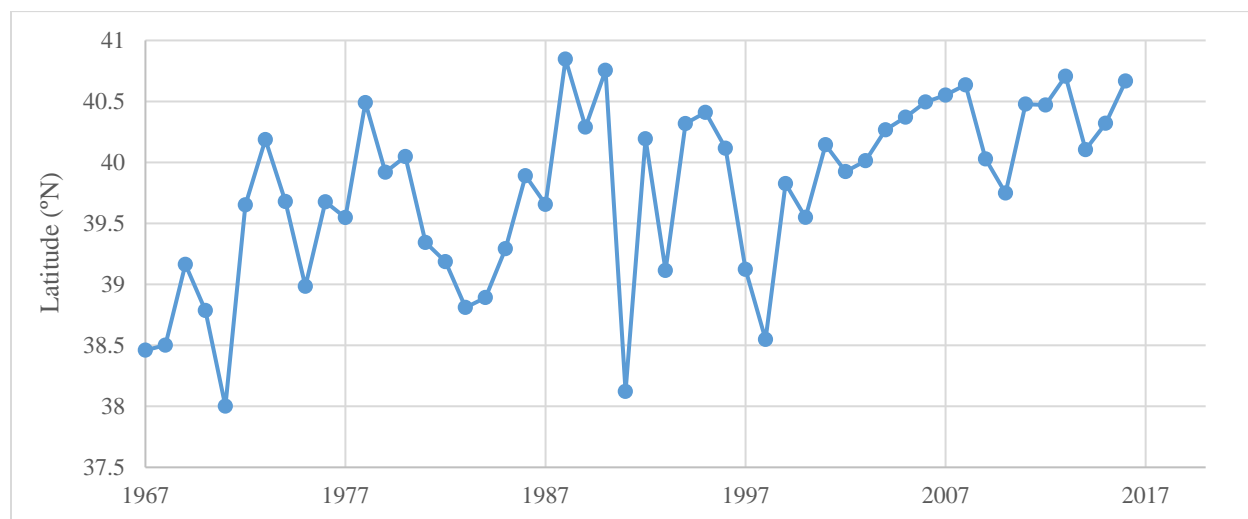


Figure 13: Mean biomass-weighted centroid latitude for summer flounder, 1967-2016, based on NEFSC trawl survey data. Data source: OceanAdapt portal, <http://oceanadapt.rutgers.edu/>.

An animation of summer flounder distribution changes over time from the NEFSC spring trawl survey from 1968 to 2014 can be viewed at: <https://www.nefsc.noaa.gov/ecosys/climate-change/summer-flounder.html>.

While observations of summer flounder north of Cape Cod have historically been rare, this may be changing as the stock distribution changes over time. In June 2012, scientists reported the first observations of young of the year (YOY) summer flounder in a southern Maine estuary, capturing two YOY individuals at the mouth of the Saco River estuary. Because YOY specimens have not previously been recorded at the northern extent of the summer flounder range, a northward range expansion is a possible explanation for this observation (Rudnický et al. 2016).

Both changes in environmental conditions and changes in fishing mortality, along with other factors, are likely to be important mechanisms affecting the distribution of summer flounder. The exact mechanism causing a distributional shift in any given species is not always clear and is likely to differ by species. Furthermore, as noted above, multiple mechanisms may be contributing to

changes in distribution, confounding efforts to attribute changes in abundance and distribution to only one cause.

6.2 NON-TARGET SPECIES

Non-target species are those species caught incidentally while targeting other species, in this case, while targeting summer flounder. Some non-target species are occasionally retained, others are commonly discarded. This section describes the non-target species commonly caught in the commercial summer flounder fishery and summarizes their management status and stock status.

6.2.1 Identification of Major Non-Target Species

For many species, including summer flounder, associated non-target species can be difficult to identify and can change from year to year or over longer time series, based on many factors such as changing regulations, fluctuations in stock conditions, shifting species distributions, and changing economic conditions.

Northeast Fisheries Observer Program (NEFOP) data were used to identify the major species caught incidentally on commercial trawl trips where summer flounder comprised over 50% of the landings (by weight; a proxy for directed summer flounder trips). Those non-target species making up 2% or percentage of total catch weight over that time period include little skate, spiny dogfish, clearnose skate, winter skate, unknown skate, Northern sea robin, barndoor skate, and black sea bass (Figure 14). Scup composed slightly less than 2% of the total catch weight; however, they are included as non-target species in this analysis given their management under the same FMP as summer flounder and black sea bass.

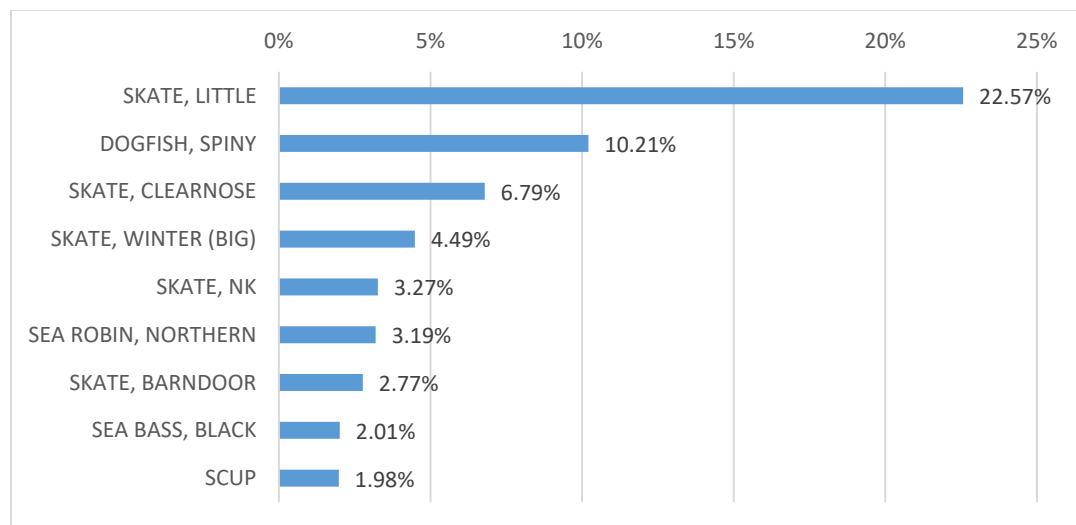


Figure 14: Most commonly caught fish species on observed hauls where summer flounder >50% of catch by weight, 2012-2016. Source: NEFOP data as of July 2016.

6.2.2 Description and Status of Major Non-Target Species

The stock status and management status of the non-target species identified above are briefly described below. More information is provided for scup and black sea bass relative to other non-target species due to their management under the same FMP as summer flounder. Management

measures for the Mid-Atlantic and New England Fishery Management Council-managed species (skates, spiny dogfish, black sea bass, and scup) include AMs to address ACL overages through reductions in landings limits in following years. AMs for all these species take discards into account. These measures help to mitigate negative impacts from discards in these recreational fisheries, and other fisheries.

6.2.2.1 Northeast Skate Complex

The following information is taken from NEFMC 2018. The Northeast skate complex fishery in the Greater Atlantic Region includes seven skate species and operates from Maine to Cape Hatteras, North Carolina, and from inshore to offshore waters on the edge of the continental shelf. Skate is mostly harvested incidentally in trawl and gillnet fisheries targeting groundfish, monkfish, and sometimes scallops. The Northeast skate complex fishery consists of seven species: *Leucoraja ocellata* (winter skate); *Dipturus laevis* (barndoor skate); *Amblyraja radiata* (thorny skate); *Malacoraja senta* (smooth skate); *Leucoraja erinacea* (little skate); *Raja eglanteria* (clearnose skate); and *Leucoraja garmani* (rosette skate). Given that most of these species were identified as non-target catch in the commercial summer flounder fishery, along with "unknown skates," all of these species are briefly summarized here.

The primary target species in the skate fishery are winter and little skates. Winter skates are harvested for their wings for human consumption, and little skates are harvested as bait for lobster fisheries. Thorny skate and barndoor skate are currently prohibited species.

The stock status relies for each skate species entirely on the annual NMFS trawl survey. The fishing mortality reference points are based on changes in survey biomass indices. If the three-year moving average of the survey biomass index for a skate species declines by more than the average CV of the survey time series, then fishing mortality is assumed to be greater than F_{MSY} and it is concluded that overfishing is occurring for that species (NEFSC 2007). The average CVs of the indices are given by species in Table 22. Except for little skates, the abundance and biomass trends are best represented by the fall survey, which has been updated through 2014. Little skate abundance and biomass trends are best represented by the spring survey, which has been updated through 2015. Based on survey data updated through fall 2014/spring 2015, only thorny skate remained in an overfished condition (Table 22).

For barndoor skate, the 2014-2016 NEFSC autumn average survey biomass index of 1.60 kg/tow is above the biomass threshold reference point (0.78 kg/tow) and the BMSY proxy (1.57 kg/tow) (Table 22). The 2014-2016 average index is above the 2013-2015 index by 0.5%. It is recommended that this stock is not overfished and overfishing is not occurring.

For clearnose skate, the 2014-2016 NEFSC autumn average biomass index of 0.59 kg/tow is above the biomass threshold reference point (0.33 kg/tow) but below the BMSY proxy (0.66 kg/tow) (Table 22). The 2014-2016 index is below the 2013-2015 index by 19.5% which is less than the threshold percent change of 40%. It is recommended that this stock is not overfished and overfishing is not occurring.

For little skate, the 2015-2017 NEFSC spring average biomass index of 5.49 kg/tow is above the biomass threshold reference point (3.07 kg/tow) but below the BMSY proxy (6.15 kg/tow) (Table 22). The 2015-2017 average index is below the 2014-2016 average by 2.6% which is less than the threshold percent change of 20%. It is recommended that this stock is not overfished and overfishing is not occurring.

For rosette skate, the 2014-2016 NEFSC autumn average biomass index of 0.047 kg/tow is above the biomass threshold reference point (0.024 kg/tow) but below the BMSY proxy (0.048 kg/tow) (Table 22). The 2014-2016 index is below the 2013-2015 index by 7.9% which is less than the threshold percent change of 60%. It is recommended that this stock is not overfished and overfishing is not occurring.

For smooth skate, the 2014-2016 NEFSC autumn average biomass index of 0.25 kg/tow is above the biomass threshold reference point (0.134 kg/tow) but below the BMSY proxy (0.27 kg/tow) (Table 22). The 2014-2016 index is above the 2013-2015 index by 21.4%. It is recommended that this stock is not overfished and overfishing is not occurring.

For thorny skate, the 2014-2016 NEFSC autumn average biomass index of 0.18 kg/tow is well below the biomass threshold reference point (2.06 kg/tow) [Table 2]. The 2014-2016 index is higher than the 2013- 2015 index by 3.7%. It is recommended that this stock is overfished but overfishing is not occurring.

For winter skate, the 2014-2016 NEFSC autumn average biomass index of 6.65 kg/tow is above the biomass threshold reference point (2.83 kg/tow) and above the BMSY proxy (5.66 kg/tow) (Table 22). The 2014-2016 average index is above the 2013-2015 index by 24.2%. It is recommended that this stock is not overfished and overfishing is not occurring.

Table 22: Summary by species of recent survey indices, survey strata used and biomass reference points for the Northeast Skate Complex. Source: NEFMC 2018.

	BARNDOR	CLEARNOSE	LITTLE	ROSETTE	SMOOTH	THORNY	WINTER
Survey (kg/tow)	Autumn	Autumn	Spring	Autumn	Autumn	Autumn	Autumn
Time Series Basis	1963-1966	1975-2007	1982-2008	1967-2007	1963-2007	1963-2007	1967-2007
Strata Set	Offshore 1-30, 34-40	Offshore 61-76, Inshore 17,20,23,26,29,32,35,38,41,44	Offshore 1-30, 34-40, 61-76, Inshore 2,5,8,11,14,17,20,23,26,29,32,35,38,41,44-46,56,59-61,64-66	Offshore 61-76	Offshore 1-30, 34-40	Offshore 1-30, 34-40	Offshore 1-30, 34-40, 61-76
2010	1.10	0.68	10.63	0.028	0.18	0.28	8.09
2011	1.02	1.32	6.88	0.034	0.30	0.18	6.65
2012	1.54	0.93	7.54	0.040	0.21	0.08	5.29
2013	1.07	0.77	6.90	0.056	0.14	0.11	2.95
2014	1.62	0.61	6.54 ^a	0.053	0.22	0.21	6.95
2015	2.08	0.82	6.82	0.045	0.25	0.19	6.15
2016	1.09	.339	3.56 ^b	0.044	0.27	0.13	6.84
2017			6.09				
2010-2012 3-year average	1.22	0.97	8.35	0.033	0.23	0.18	6.68
2011-2013 3-year average	1.21	1.01	7.11	0.042	0.22	0.12	4.96
2012-2014 3-year average	1.41	0.77	6.99 ^a	0.048	0.19	0.13	5.06
2013-2015 3-year average	1.59	0.73	6.75 ^a	0.051	0.21	0.17	5.35
2014-2016 3-year average	1.60	0.59	5.64 ^b	0.047	0.25	0.18	6.65
2015-2017 3-year average			5.49				
Percent change 2011-2013 compared to 2010-2012	-1.0	+3.1	-14.9	+28.8	-5.0	-31.9	-25.7
Percent change 2012-2014 compared to 2011-2013	+16.5	-23.3	-1.6	+14.6	-12.5	+8.7	+2.0
Percent change 2013-2015 compared to 2012-2014	+12.9	-4.8	-3.4	+6.0	+6.8	+26.3	+5.7
Percent change 2014-2016 compared to 2013-2015	+0.5	-19.5	-16.8	-7.9	+21.4	+3.7	+24.2
Percent change 2015-2017 compared to 2014-2016			-2.6				
Percent change for overfishing status determination in FMP	-30	-40	-20	-60	-30	-20	-20
Biomass Target	1.57	0.66	6.15	0.048	0.27	4.13	5.66
Biomass Threshold	0.78	0.33	3.07	0.024	0.13	2.06	2.83

^a No survey tows completed south of Delaware in spring 2014. Values for 2014 were adjusted for missing strata (i.e., Offshore 61-68, Inshore 32,35, 38, 41, 44) but may not be fully comparable to other surveys which sampled all strata.

6.2.2.2 *Spiny Dogfish*

Spiny dogfish (*Squalus acanthias*) is a coastal shark with populations on the continental shelves of northern and southern temperate zones throughout the world. It is the most abundant shark in the western north Atlantic and ranges from Labrador to Florida, but is most abundant from Nova Scotia to Cape Hatteras, North Carolina. Its major migrations on the northwest Atlantic shelf are north and south, but it also migrates inshore and offshore seasonally in response to changes in water temperature. Spiny dogfish are jointly managed by the MAFMC and the NEFMC; the Commission also has a complementary FMP for state waters.

Spiny dogfish have a long life, late maturation, a long gestation period, and relatively low fecundity, making them generally vulnerable to depletion. Fish, squid, and ctenophores dominate the stomach contents of spiny dogfish collected during the NEFSC bottom trawl surveys but they are opportunistic and have been found to consume a wide variety of prey. More detailed life history information can be found in the EFH source document for spiny dogfish at:

<http://www.nefsc.noaa.gov/publications/tm/tm203/tm203.pdf>.

The most recent assessment update was in 2015, which found that the stock is not overfished nor subject to overfishing. Spawning Stock Biomass (SSB) was estimated to be 106% of the target B_{MSY} proxy in 2015 (MAFMC 2016).

6.2.2.3 *Northern Sea Robin*

Northern sea robins (*Prionotus carolinus*) have not been assessed, therefore their overfished and overfishing status is unknown. Sea robins are not managed directly at the federal or state level.

Northern sea robins are distributed from Nova Scotia to central Florida, and are most common between Cape Cod, MA and Cape Hatteras, NC. Sea robins typically inhabit coastal waters over open sand or mud from near shore to depths of about 170 meters, and undertake southerly/offshore migrations in the winter (Gilbert and Williams 2002).

6.2.2.4 *Black Sea Bass*

Black sea bass are protogynous hermaphrodites, meaning the majority are born females and some individuals later transition to males. Black sea bass are commonly associated with physical structures such as reefs, although they utilize a variety of habitats including open bottom. Both their protogynous life history and structure-orienting behavior have posed challenges for prior analytical assessments of this species. The 2016 benchmark stock assessment working group (NEFSC 2017) spent a great deal of time analyzing and simulating various datasets to gain a better understanding on how these life history characteristics impact the assessment and the black sea bass population.

Regarding the protogynous life history, results indicate the stock is more robust to exploitation than previously thought due to factors such as a sex ratio that is not highly skewed and the contribution of secondary males to spawning success. Typical protogynous hermaphrodites start as nearly all females and transition with age and size to nearly all males. This makes these species highly susceptible to overexploitation as a fishery selectively removes the larger males, therefore increasing sex change rates and reducing productivity. Age data from the NEFSC winter and spring trawl survey indicates sex ratios within the north Atlantic black sea bass stock (Cape Hatteras, NC to Canada) are not as highly skewed with a female to male ratio of 70/30 at the youngest and smallest sea bass and a 45/65 ratio at the largest and oldest sea bass. A simulation model was also developed (Blaylock and Shepherd 2016) that evaluated black sea bass vulnerability to fisheries

exploitation given its unique life history characteristics. Results from this analysis highlight the importance of secondary males, and therefore less reliance on dominant males, in the spawning success of sea bass. This spawning characteristic of north Atlantic black sea bass is more similar to a typical gonochoristic species (e.g., summer flounder or scup) and therefore improves its resiliency to exploitation compared to other species with a typical protogynous life history. As a result of this information, SSB calculations were defined as combined male and female mature biomass. Most stock assessments of mid-Atlantic species rely heavily on data collected during the NEFSC's biannual bottom trawl survey and other state conducted fishery independent trawl surveys. A closer examination of trawl catches from these surveys shows there is no significant difference in the number or length frequency of sea bass caught right near physical habitat (e.g. reefs) or up to distances 11 miles from the physical habitat, indicating trawl surveys are viable surveys that can be appropriately used as tuning indices in the stock assessment.

The northern stock of black sea bass (i.e., black sea bass north of Cape Hatteras, North Carolina) was under a rebuilding plan from 2000 until 2009. Black sea bass were declared rebuilt based on the findings of the Data Poor Stocks Working Group (DPSWG), which performed a benchmark stock assessment for black sea bass in 2008 (DPSWG 2009).

The most recent benchmark stock assessment for black sea bass was completed in December 2016. This assessment indicated that the black sea bass stock north of Cape Hatteras, NC was not overfished and overfishing was not occurring in 2015. SSB averaged around 6 million pounds from the late 1980's and early 1990's and then steadily increased from 1997 to 2002 when it reached 18.7 million pounds. There was then a decline in SSB until 2007(8.9 million pounds), followed by a steady increase through 2015 with SSB at its highest level estimated (Figure 15). The model-estimated SSB in 2015 was 48.89 million pounds (22,176 mt), 2.3 times SSB at maximum sustainable yield, $SSB_{MSY} = 21.31$ million pounds (9,667 mt).

The fishing mortality rate (F) in 2015 was 0.27, below the fishing mortality threshold reference point ($F_{MSY\ PROXY} = F_{40\%}$) of 0.36 (NEFSC 2017). Fishing mortality was very high in the early 1990's, typically greater than 1.0, but declined and stabilized after 1997 once black sea bass was added to the summer flounder and scup management plan. Fishing mortality has been below the $F_{MSY\ PROXY}$ reference point for the last five years (Figure 16). Model estimated recruitment was relatively constant throughout the time series except for large peaks from the 1999 and 2011 year classes. Average recruitment from 1989 – 2015 equaled 24.3 million fish with the 1999 year class estimated at 37.3 fish and the 2011 year class estimated at 68.9 million fish. Since 2012, recruitment has been average with the latest cohort (2014 year class) estimated to be 24.9 million fish.

A data update (i.e. updated catch, landings, and survey indices through 2016) was conducted in 2017 and indicates that black sea bass biomass continues to be high, and the 2015 year class appears to be above average.

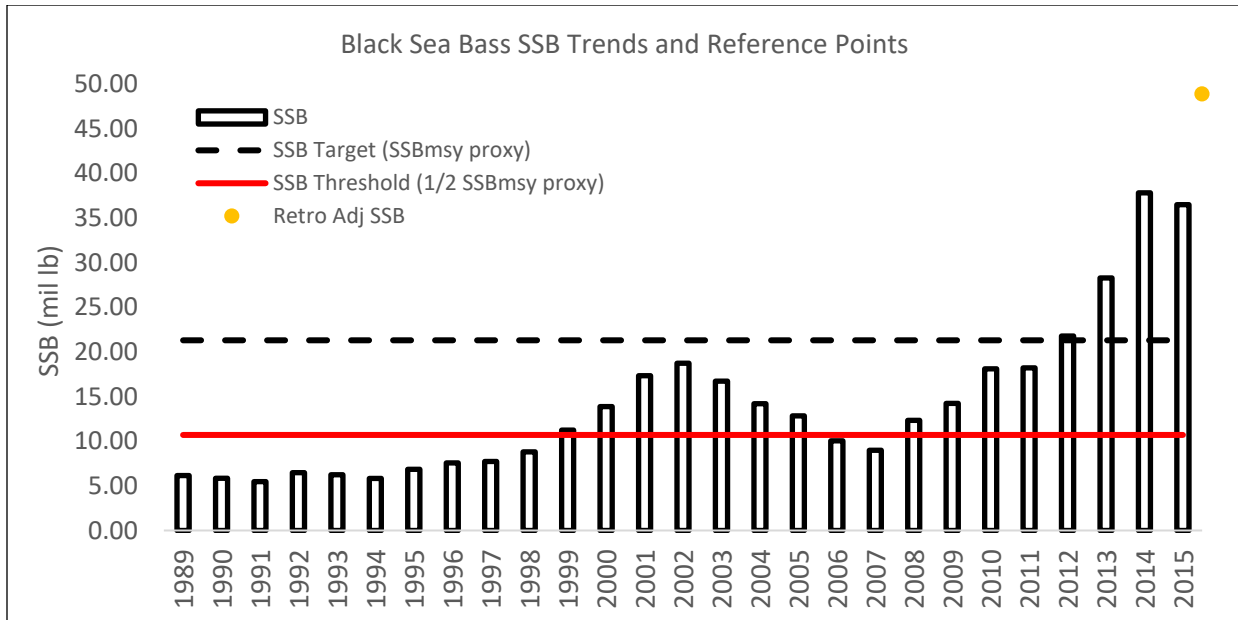


Figure 15: Spawning stock biomass, both mature male and female biomass, of black sea bass from 1989 to 2015 and biomass reference points from the 2016 benchmark stock assessment (NEFSC 2017). The 2015 retro-adjusted spawning stock biomass value was generated to correct for the retrospective bias present in the assessment model and is used as the estimate to compare to the reference points.

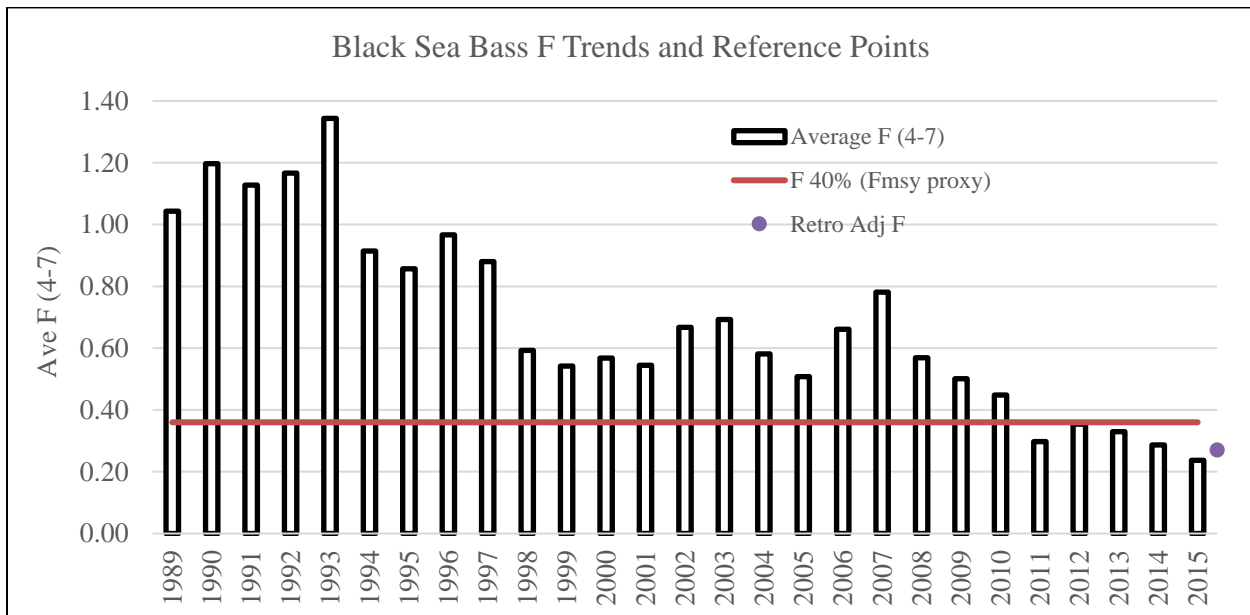


Figure 16: Fishing mortality rate on black sea bass ages 4-7 and the F_{MSY} PROXY reference point from the 2016 benchmark stock assessment (NEFSC 2017). The 2015 retro-adjusted fishing mortality rate value was generated to correct for the retrospective bias present in the assessment model and is used as the estimate to compare to the reference points.

6.2.2.5 Scup

The most recent benchmark stock assessment for scup took place in 2015 as part of the 60th Stock Assessment Work Group and Stock Assessment Review Committee (SAW/SARC 60) and included data through 2014 (NEFSC 2015). A stock assessment update was conducted in 2017 with catch and survey data through 2016. The update assessment found that scup was not overfished and overfishing was not occurring in 2016 relative to the biological reference points from the benchmark assessment (Terceiro 2017b). SSB was very low and averaged around 19.38 million pounds from the early 1980's and late 1990's and then steadily increased from 2000 to a peak in 2011 when it reached 513.80 million pounds. SSB has declined since its peak in 2011 but remains very high and increased slightly in 2016 (Figure 3). The model-estimated SSB in 2016 was 396.60 million pounds (179,898 mt), 2.1 times SSB at maximum sustainable yield, $SSB_{MSY} = 192.47$ million pounds (87,302 mt).

The fishing mortality rate (F) in 2016 was 0.139, which is 37% below the fishing mortality threshold reference point ($F_{MSY\ PROXY} = F_{40\%}$) of 0.220 (Terceiro 2017b). Fishing mortality was very high in the 1980's and mid-1990's, typically greater than 1.0, but declined in 1995 and has stabilized since 2001 (Figure 17). Fishing mortality has been below the $F_{MSY\ PROXY}$ reference point for the last 17 years. The average recruitment from 1984 to 2016 is 121 million fish at age 0. The 2015 year class is currently estimated to be large at 252 million fish, while the 2016 year class is currently estimated to be below average at 65 million fish (Figure 18).

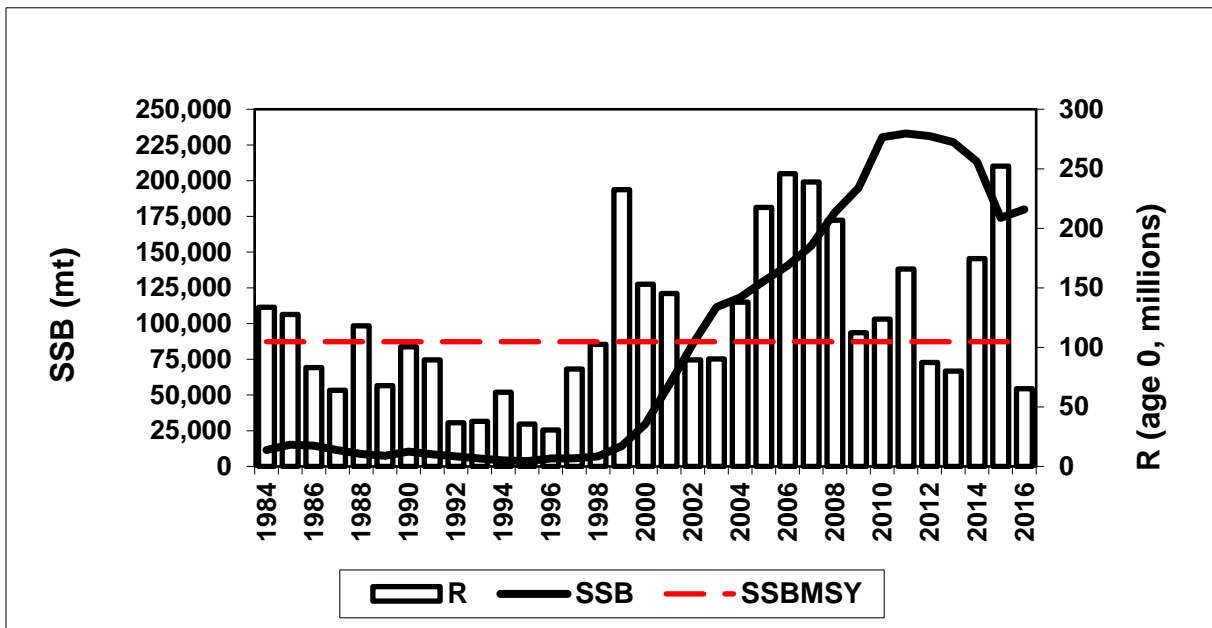


Figure 17: Spawning Stock Biomass (SSB; solid line) and Recruitment (R at age 0; vertical bars) for scup from the 2017 update stock assessment (Terceiro 2017b). The horizontal dashed line is the SSB_{MSY} proxy = $SSB_{40\%} = 87,302$ mt (NEFSC 2015).

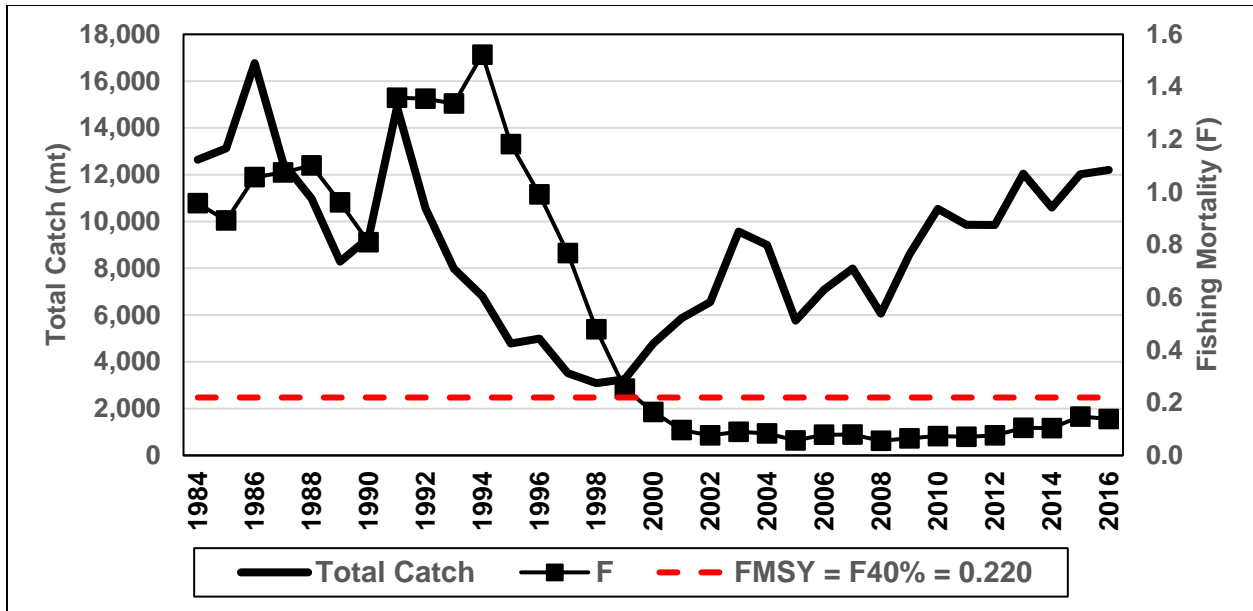


Figure 18: Total fishery catch and fishing mortality (F at age 3) for scup from the 2017 stock assessment update (Terceiro 2017b). The horizontal dashed line is the F_{MSY} proxy = $F_{40\%} = 0.220$ (NEFSC 2015).

6.3 PHYSICAL ENVIRONMENT AND ESSENTIAL FISH HABITAT

This section describes the physical environment and habitat within the affected environment for summer flounder, including a description of the broader physical environment within the management unit (section 6.3.1), summer flounder general habitat preferences, EFH, and Habitat Areas of Particular Concern (HAPCs; section 6.3.2), and fishery impact considerations (section 6.3.3).

6.3.1 Physical Environment

Summer flounder inhabit the northeast U.S. shelf ecosystem, which includes the area from the Gulf of Maine south to Cape Hatteras, extending seaward from the coast to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream. The northeast shelf ecosystem includes the Gulf of Maine, Georges Bank, the Mid-Atlantic Bight, and the continental slope.

The Gulf of Maine is an enclosed coastal sea, characterized by relatively cold waters and deep basins, with a patchwork of various sediment types. Georges Bank is a relatively shallow coastal plateau that slopes gently from north to south and has steep submarine canyons on its eastern and southeastern edge. It is characterized by highly productive, well-mixed waters and strong currents. The Mid-Atlantic Bight is comprised of the sandy, relatively flat, gently sloping continental shelf from southern New England to Cape Hatteras, North Carolina.

The continental slope begins at the continental shelf break and continues eastward with increasing depth until it becomes the continental rise. It is fairly homogenous, with exceptions at the shelf break, some of the canyons, the Hudson Shelf Valley, and in areas of glacially rafted hard bottom. The continental shelf in this region was shaped largely by sea level fluctuations caused by past ice

ages. The shelf's basic morphology and sediments derive from the retreat of the last ice sheet and the subsequent rise in sea level. Currents and waves have since modified this basic structure.

The shelf slopes gently from shore out to between 100 and 200 km offshore where it transforms to the slope (100 - 200 m water depth) at the shelf break. Numerous canyons incise the slope and some cut up onto the shelf itself. Shelf valleys and slope canyons were formed by rivers of glacier outwash that deposited sediments on the outer shelf edge as they entered the ocean. Most valleys cut about 10 m into the shelf; however, the Hudson Shelf Valley is about 35 m deep. The valleys were partially filled as the glacier melted and retreated across the shelf. The glacier also left behind a lengthy scarp near the shelf break from Chesapeake Bay north to the eastern end of Long Island.

Some sand ridges are more modern in origin than the shelf's glaciated morphology. Their formation is not well understood; however, they appear to develop from the sediments that erode from the shore face. They maintain their shape, so it is assumed that they are in equilibrium with modern current and storm regimes. They are usually grouped, with heights of about 10 m, lengths of 10 - 50 km and spacing of 2 km. Ridges are usually oriented at a slight angle towards shore, running in length from northeast to southwest. The seaward face usually has the steepest slope. Sand ridges are often covered with smaller similar forms such as sand waves, megaripples, and ripples. Swales occur between sand ridges. Since ridges are higher than the adjacent swales, they are exposed to more energy from water currents and experience more sediment mobility than swales. Ridges tend to contain less fine sand, silt and clay while relatively sheltered swales contain more of the finer particles. Swales have greater benthic macrofaunal density, species richness and biomass, due in part to the increased abundance of detrital food and the less physically rigorous conditions.

Sand waves are usually found in patches of 5 - 10 with heights of about 2 m, lengths of 50 - 100 m and 1 - 2 km between patches. Sand waves are primarily found on the inner shelf, and often observed on sides of sand ridges. They may remain intact over several seasons. Megaripples occur on sand waves or separately on the inner or central shelf. During the winter storm season, they may cover as much as 15% of the inner shelf. They tend to form in large patches and usually have lengths of 3 - 5 m with heights of 0.5 - 1 m. Megaripples tend to survive for less than a season. They can form during a storm and reshape the upper 50 - 100 cm of the sediments within a few hours. Ripples are also found everywhere on the shelf and appear or disappear within hours or days, depending upon storms and currents. Ripples usually have lengths of about 1 - 150 cm and heights of a few centimeters.

Sediments are uniformly distributed over the shelf in this region. A sheet of sand and gravel varying in thickness from 0 - 10 m covers most of the shelf. The mean bottom flow from the constant southwesterly current is not fast enough to move sand, so sediment transport must be episodic. Net sediment movement is in the same southwesterly direction as the current. The sands are mostly medium to coarse grains, with finer sand in the Hudson Shelf Valley and on the outer shelf. Mud is rare over most of the shelf, but is common in the Hudson Shelf Valley. Occasionally relic estuarine mud deposits are re-exposed in the swales between sand ridges. Fine sediment content increases rapidly at the shelf break, which is sometimes called the "mud line," and sediments are 70 - 100% fine on the slope. On the slope, silty sand, silt, and clay predominate (Stevenson et al. 2004).

Greene et al. (2010) identified and described Ecological Marine Units (EMUs) in New England and the Mid-Atlantic based on sediment type, seabed form (a combination of slope and relative

depth)¹⁵, and benthic organisms.¹⁶ According to this classification scheme, the sediment composition off New England and the Mid-Atlantic is about 68% sand, 26% gravel, and 6% silt/mud. The seafloor is classified as about 52% flat, 26% depression, 19% slope, and 3% steep (Table 23).

Artificial reefs are another significant Mid-Atlantic habitat. These localized areas of hard structure were formed by shipwrecks, lost cargoes, disposed solid materials, shoreline jetties and groins, submerged pipelines, cables, and other materials (Steimle and Zetlin 2000). While some of these materials were deposited specifically for use as fish habitat, most have an alternative primary purpose; however, they have all become an integral part of the coastal and shelf ecosystem. In general, reefs are important for attachment sites, shelter, and food for many species, and fish predators such as tunas may be attracted by prey aggregations, or may be behaviorally attracted to the reef structure.

Like all the world's oceans, the western North Atlantic is experiencing changes to the physical environment as a result of global climate change. These changes include warming temperatures; sea level rise; ocean acidification; changes in stream flow, ocean circulation, and sediment deposition; and increased frequency, intensity, and duration of extreme climate events. These changes in physical habitat can impact the metabolic rate and other biological processes of marine species. As such, these changes have implications for the distribution and productivity of many marine species. Several studies demonstrate that the distribution and productivity of several species in the Mid-Atlantic have changed over time, likely because of changes in physical habitat conditions such as temperature (e.g. Weinberg 2005, Lucey and Nye 2010, Nye et al. 2011, Pinsky et al. 2013, Gaichas et al. 2015).

¹⁵ Seabed form contains the categories of depression, mid flat, high flat, low slope, side slope, high slope, and steep slope.

¹⁶ See Greene et al. 2010 for a description of the methodology used to define EMUs.

Table 23: Composition of Ecological Marine Units (EMUs) off New England and the Mid-Atlantic (Greene et al. 2010). EMUs which account for less than 1% of the surface area of these regions are not shown.

Ecological Marine Unit	Percent Coverage
High Flat Sand	13%
Moderate Flat Sand	10%
High Flat Gravel	8%
Side Slope Sand	6%
Somewhat Deep Flat Sand	5%
Low Slope Sand	5%
Moderate Depression Sand	4%
Very Shallow Flat Sand	4%
Side Slope Silt/Mud	4%
Moderate Flat Gravel	4%
Deeper Depression Sand	4%
Shallow Depression Sand	3%
Very Shallow Depression Sand	3%
Deeper Depression Gravel	3%
Shallow Flat Sand	3%
Steep Sand	3%
Side Slope Gravel	3%
High Flat Silt/Mud	2%
Shallow Depression Gravel	2%
Low Slope Gravel	2%
Moderate Depression Gravel	2%
Somewhat Deep Depression Sand	2%
Deeper Flat Sand	1%
Shallow Flat Gravel	1%
Deep Depression Gravel	1%
Deepest Depression Sand	1%
Very Shallow Depression Gravel	1%

6.3.2 Summer Flounder Habitat

The information in this section is summarized primarily from Packer et al. 1999 (the most recent EFH Source Document for summer flounder), except where noted otherwise. EFH Source Documents, which include details on stock characteristics and ecological relationships, are available at: <http://www.nefsc.noaa.gov/nefsc/habitat/efh/>.

6.3.2.1 *General Habitat Description*

Summer flounder habitat includes pelagic waters, demersal waters, saltmarsh creeks, seagrass beds, mudflats, and open bay areas from the Gulf of Maine through North Carolina. The center of its abundance lies within the Middle Atlantic Bight from Cape Cod, Massachusetts, to Cape Hatteras, North Carolina. Summer flounder exhibit strong seasonal inshore-offshore movements, although their movements are often not as extensive as compared to other highly migratory species. Adult and juvenile summer flounder normally inhabit shallow coastal and estuarine waters during the warmer months of the year and remain offshore during the fall and winter.

Juvenile summer flounder have been shown to make use of several substrate types, including sand, shell, oyster bars, and mud, as well as transition areas between sand to silt/clay. Substrate preferences of juvenile summer flounder may be correlated to presence and types of predators and prey. Juveniles make extensive use of marsh creeks and other estuarine habitats. Other studies have shown that juvenile summer flounder also make use of vegetated habitats such as sea grass beds, as well as aggregations of macroalgae (Packer et al. 1999).

Adult summer flounder generally prefer sandy habitats, including areas of quartz sand, coarse sand, and shell, but can be found in a variety of habitats with both mud and sand substrates including marsh creeks, seagrass beds, and sand flats. As with juvenile summer flounder, adults are also known to utilize vegetation such as seagrass beds, where they are able to ambush prey and avoid predation (Packer et al. 1999).

6.3.2.2 *Essential Fish Habitat (EFH)*

EFH for summer flounder was designated through Amendment 12 to the Summer Flounder, Scup, and Black Sea Bass FMP (MAFMC 1998). EFH designations for each life stage are described below and pictured in Figure 19.

Eggs: 1) North of Cape Hatteras, EFH is the pelagic waters found over the Continental Shelf (from the coast out to the limits of the EEZ), from the Gulf of Maine to Cape Hatteras, North Carolina, in the highest 90% of the all the ranked ten-minute squares for the area where summer flounder eggs are collected in the MARMAP survey. 2) South of Cape Hatteras, EFH is the waters over the Continental Shelf (from the coast out to the limits of the EEZ), from Cape Hatteras, North Carolina to Cape Canaveral, Florida, to depths of 360 ft. In general, summer flounder eggs are found between October and May, being most abundant between Cape Cod and Cape Hatteras, with the heaviest concentrations within 9 miles of shore off New Jersey and New York. Eggs are most commonly collected at depths of 30 to 360 ft.

Larvae: 1) North of Cape Hatteras, EFH is the pelagic waters found over the Continental Shelf (from the coast out to the limits of the EEZ), from the Gulf of Maine to Cape Hatteras, North Carolina, in the highest 90% of all the ranked ten-minute squares for the area where summer flounder larvae are collected in the MARMAP survey. 2) South of Cape Hatteras, EFH is the nearshore waters of the Continental Shelf (from the coast out to the limits of the EEZ), from Cape Hatteras, North Carolina to Cape Canaveral Florida, in nearshore waters (out to 50 miles from shore). 3) Inshore, EFH is all the estuaries where summer flounder were identified as being present (rare, common, abundant, or highly abundant) in the ELMR database, in the "mixing" (defined in ELMR as 0.5 to 25.0 ppt) and "seawater" (defined in ELMR as greater than 25 ppt) salinity zones. In general, summer flounder larvae are most abundant nearshore (12-50 miles from shore) at depths between 30 to 230 ft. They are most frequently found in the northern part of the Mid-Atlantic Bight from September to February, and in the southern part from November to May.

Juveniles: 1) North of Cape Hatteras, EFH is the demersal waters over the Continental Shelf (from the coast out to the limits of the EEZ), from the Gulf of Maine to Cape Hatteras, North Carolina, in the highest 90% of all the ranked ten-minute squares for the area where juvenile summer flounder are collected in the NEFSC trawl survey. 2) South of Cape Hatteras, EFH is the waters over the Continental Shelf (from the coast out to the limits of the EEZ) to depths of 500 ft, from Cape Hatteras, North Carolina to Cape Canaveral, Florida. 3) Inshore, EFH is all of the estuaries where summer flounder were identified as being present (rare, common, abundant, or highly abundant) in the ELMR database for the "mixing" and "seawater" salinity zones. In general,

juveniles use several estuarine habitats as nursery areas, including salt marsh creeks, seagrass beds, mudflats, and open bay areas in water temperatures greater than 37 °F and salinities from 10 to 30 ppt range.

Adults: 1) North of Cape Hatteras, EFH is the demersal waters over the Continental Shelf (from the coast out to the limits of the EEZ), from the Gulf of Maine to Cape Hatteras, North Carolina, in the highest 90% of all the ranked ten-minute squares for the area where adult summer flounder are collected in the NEFSC trawl survey. 2) South of Cape Hatteras, EFH is the waters over the Continental Shelf (from the coast out to the limits of the EEZ) to depths of 500 ft, from Cape Hatteras, North Carolina to Cape Canaveral, Florida. 3) Inshore, EFH is the estuaries where summer flounder were identified as being common, abundant, or highly abundant in the ELMR database for the "mixing" and "seawater" salinity zones. Generally summer flounder inhabit shallow coastal and estuarine waters during warmer months and move offshore on the outer Continental Shelf at depths of 500 ft in colder months.

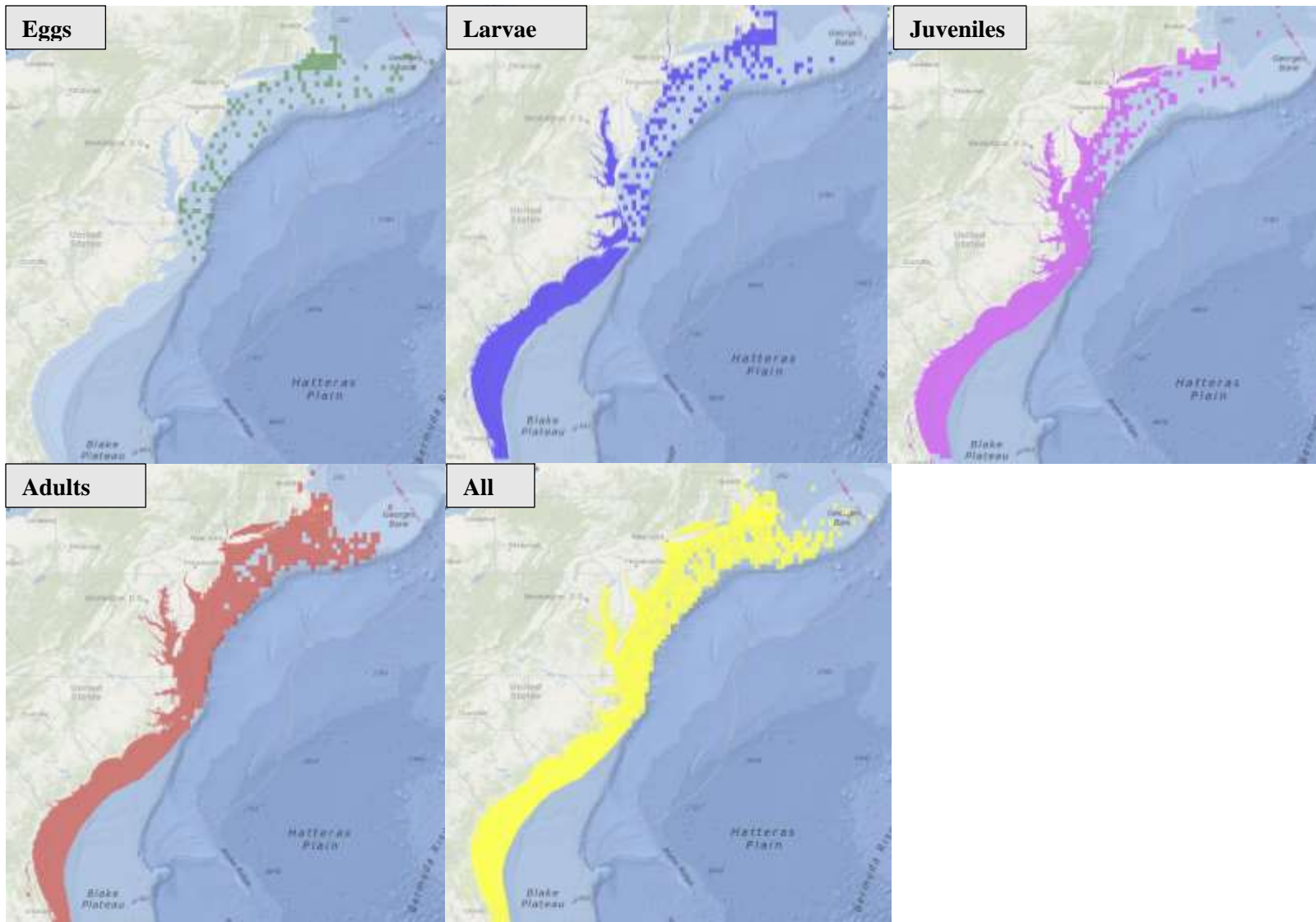


Figure 19: Designated EFH for summer flounder at various life stages. Image source: NOAA Office of Habitat Conservation EFH Mapper.

6.3.2.3 *Habitat Areas of Particular Concern (HAPCs)*

Habitat Areas of Particular Concern (HAPCs) are a subset of EFH designations that include habitat types and/or geographic areas identified by the regional fishery management councils and NOAA Fisheries as priorities for habitat conservation, management, and research. The Council identified HAPC for summer flounder through Amendment 12 to the Summer Flounder, Scup, and Black Seabass FMP in 1998. HAPC is identified on the basis of its ecological importance for shelter and feeding, and is not mapped but defined in text as follows (MAFMC 1998):

“All native species of macroalgae, seagrasses, and freshwater and tidal macrophytes in any size bed, as well as loose aggregations, within adult and juvenile summer flounder EFH is HAPC. If native species of submerged aquatic vegetation (SAV) are eliminated then exotic species should be protected because of functional value, however, all efforts should be made to restore native species.”

As most summer flounder HAPC occurs in state waters there are no associated protections. However, the Council notes that designating SAV as HAPC may allow their recommendations to carry additional weight in the context of EFH consultations (Fisheries Forum 2016).

6.3.3 Fishery Impact Considerations

6.3.3.1 *Description of Fishing Gear*

The principal gear used in commercial fishing for summer flounder is the otter trawl, which historically has accounted for over 90% of the landings. According to federal Vessel Trip Report data, otter trawls accounted for about 98% of all commercial landings over 2012-2016 (Table 24). Smaller amounts were caught with sink gill nets, scallop trawls, and hand lines (less than 1% each according to VTR data).

A disadvantage of analyzing landings by gear type using federal VTR data is that it does not include state-only permitted vessels submitting only state level VTRs. However, a weakness of the dealer data is the relatively large proportion of missing or unknown “gear type” entries. Thus, there are advantages and disadvantages of both data types and they are shown for comparison in Table 24 for years 2012-2016.

Table 24: Gear type breakdown for summer flounder landings, 2012-2016 combined, from dealer data and VTR data. Gear types accounting for less than 0.5% of landings are not shown.

Gear Type: VTR Data (2012-2016)	% of Summer Flounder Landings
TRAWL, OTTER, BOTTOM, FISH	97.76
BEAM TRAWL, OTHER	1.2%
GILL NET, SINK, OTHER	0.9%
TRAWL, OTTER, BOTTOM, SCALLOP	0.8%
HAND LINE, OTHER	0.7%
Gear Type: Dealer Data (2012-2016)	% of Summer Flounder Landings
TRAWL, OTTER, BOTTOM, FISH	89.8%
UNKNOWN	3.5%
HAND LINE, OTHER	2.4%
GILL NET, SINK, OTHER	0.9%
TRAWL, OTTER, BOTTOM, SCALLOP	0.7%
BEAM TRAWL, OTHER	0.6%

6.3.3.2 *Fishing Impacts to EFH*

Only those gear types which contact the bottom impact physical habitat. These gears have a variety of impacts on habitat. Stevenson et al. (2004) compiled a detailed summary of several studies of the impacts of a variety of gear types on marine habitats. Conclusions relevant for this action are briefly summarized below with a focus on bottom trawl gear since this is the predominant gear type used to harvest summer flounder.

Otter trawl doors can create furrows in sand, mud, and gravel/rocky substrates. Studies have found furrow depths that range from 2 to 10 cm. Bottom trawl gear can also re-suspend and disperse surface sediments and can smooth topographic features. It can also result in reduced abundance, and in some cases reduced diversity, of benthic species such as nematodes, polychaetes, and bivalves. It can also have short-term positive ecological impacts such as increased food value and increased chlorophyll production in surface sediments. The duration of these impacts varies by sediment type, depth, and frequency of the impact (e.g. a single trawl tow vs. repeated tows). Some studies have documented effects that lasted only a few months. Other studies found effects that lasted up to 18 months. Impacts tend to have shorter durations in dynamic environments with less structured bottom composition compared to less dynamic environments with structured bottom. Shallower water, stronger bottom currents, more wave action, finer-grained sediments, and higher frequencies of natural disturbance are characteristics that make environments more dynamic (Stevenson et al. 2004).

Compared to otter trawls and dredges, Stevenson et al. (2004) summarized fewer studies on other bottom tending gears such as traps. Morgan and Chuenpagdee (2003) found that the impacts of bottom gill nets, traps, and longlines were generally limited to warm or shallow-water environments with rooted aquatic vegetation or “live bottom” environments (e.g. coral reefs). These impacts were of a lesser degree than those from bottom trawls and dredges. Eno et al. (2001) found that traps can bend, smother, and uproot sea pens in soft sediments; however, sea pen communities were largely able to recover within a few days of the impact. Due to the very small percentage of non-trawl gear types used in the commercial summer flounder fishery, the impacts of the alternatives in this document (section 7.0) are primarily focused on the bottom trawl fishery rather than on other gear types.

The Mid-Atlantic Council developed some fishery management actions with the sole intent of protecting marine habitats. For example, in Amendment 9 to the Mackerel, Squids, and Butterfish FMP, the Council determined that bottom trawls used in Atlantic mackerel, longfin and *Illex* squid, and butterfish fisheries have the potential to adversely affect EFH for some federally-managed fisheries (MAFMC 2008). As a result of Amendment 9, closures to squid trawling were developed for portions of Lydonia and Oceanographer Canyons. Subsequent closures were implemented in these and Veatch and Norfolk Canyons to protect tilefish EFH by prohibiting all bottom trawling activity. In addition, amendment 16 to the Mackerel, Squid, and Butterfish FMP prohibits the use of all bottom-tending gear in fifteen discrete zones and one broad zone where deep sea corals are known or highly likely to occur (81 Federal Register 90246, December 14, 2016).

Actions implemented in the Summer Flounder, Scup, and Black Sea Bass FMP that affected species with overlapping EFH were considered Amendment 13 (MAFMC 2002). The analysis in Amendment 13 indicated that no management measures were needed to minimize impacts to EFH because the trawl fisheries for summer flounder, scup, and black sea bass in Federal waters are conducted primarily in high energy mobile sand and bottom habitat where gear impacts are

minimal and/or temporary in nature. The principal gears used in the recreational fisheries for summer flounder are rod and reel and handline. These gears have minimal adverse impacts on EFH in the region (Stevenson et al. 2004).

6.4 PROTECTED RESOURCES

Numerous protected species inhabit the affected environment of the summer flounder fishery (Table 25). These species are under NMFS jurisdiction and are afforded protection under the Endangered Species Act (ESA) of 1973 and/or the Marine Mammal Protection Act (MMPA) of 1972.

Cusk, alewife, and blueback herring are NMFS "candidate species" under the ESA. Candidate species are those petitioned species for which NMFS has determined that listing may be warranted under the ESA and those species for which NMFS has initiated an ESA status review through an announcement in the Federal Register. If a species is proposed for listing the conference provisions under Section 7 of the ESA apply (see 50 CFR 402.10); however, candidate species receive no substantive or procedural protection under the ESA. As a result, these species will not be discussed further in this and the following sections; however, NMFS recommends that project proponents consider implementing conservation actions to limit the potential for adverse effects on candidate species from any proposed action. Additional information on cusk, alewife, and blueback herring can be found at: <http://www.nmfs.noaa.gov/pr/species/esa/candidate.htm>.

A summary of protected resources and critical habitat that may occur in the affected environment is provided in Table 25, followed by sections detailing which species and critical habitat are not likely to be affected by the proposed action (section 6.4.1) and which species would be potentially affected by the proposed action (i.e., there have been observed/documentated interactions in the fishery or with gear type(s) similar to those used in the fishery; section 6.4.2).

Table 25: Species Protected Under the ESA and/or MMPA that may occur in the Affected Environment of the summer flounder fishery. Marine mammal species (cetaceans and pinnipeds) italicized and in bold are considered MMPA strategic stocks.¹

Species	Status	Potentially affected by this action?
Cetaceans		
<i>North Atlantic right whale (Eubalaena glacialis)</i>	<i>Endangered</i>	<i>Yes</i>
<i>Humpback whale, West Indies DPS (Megaptera novaeangliae)</i>	Protected (MMPA)	Yes
<i>Fin whale (Balaenoptera physalus)</i>	<i>Endangered</i>	<i>Yes</i>
<i>Sei whale (Balaenoptera borealis)</i>	<i>Endangered</i>	<i>Yes</i>
<i>Blue whale (Balaenoptera musculus)</i>	<i>Endangered</i>	<i>No</i>
<i>Sperm whale (Physeter macrocephalus)</i>	<i>Endangered</i>	<i>No</i>
Minke whale (<i>Balaenoptera acutorostrata</i>)	Protected (MMPA)	Yes
<i>Pilot whale (Globicephala spp.)²</i>	<i>Protected (MMPA)</i>	<i>Yes</i>
Pygmy sperm whale (<i>Kogia breviceps</i>)	Protected (MMPA)	No
Dwarf sperm whale (<i>Kogia sima</i>)	Protected (MMPA)	No
Risso's dolphin (<i>Grampus griseus</i>)	Protected (MMPA)	Yes
Atlantic white-sided dolphin (<i>Lagenorhynchus acutus</i>)	Protected (MMPA)	Yes
Short Beaked Common dolphin (<i>Delphinus delphis</i>)	Protected (MMPA)	Yes
Atlantic Spotted dolphin (<i>Stenella frontalis</i>)	Protected (MMPA)	No
Striped dolphin (<i>Stenella coeruleoalba</i>)	Protected (MMPA)	No
<i>Bottlenose dolphin (Tursiops truncatus)³</i>	<i>Protected (MMPA)</i>	<i>Yes</i>
Harbor porpoise (<i>Phocoena phocoena</i>)	Protected (MMPA)	Yes

Table 25, continued:

Sea Turtles		
Leatherback sea turtle (<i>Dermochelys coriacea</i>)	Endangered	Yes
Kemp's ridley sea turtle (<i>Lepidochelys kempii</i>)	Endangered	Yes
Green sea turtle, North Atlantic DPS (<i>Chelonia mydas</i>)	Threatened	Yes
Loggerhead sea turtle (<i>Caretta caretta</i>), Northwest Atlantic Ocean DPS	Threatened	Yes
Hawksbill sea turtle (<i>Eretmochelys imbricate</i>)	Endangered	No
Fish		
Shortnose sturgeon (<i>Acipenser brevirostrum</i>)	Endangered	No
Atlantic salmon (<i>Salmo salar</i>)	Endangered	Yes
Atlantic sturgeon (<i>Acipenser oxyrinchus</i>)		
<i>Gulf of Maine DPS</i>	Threatened	Yes
<i>New York Bight DPS, Chesapeake Bay DPS, Carolina DPS & South Atlantic DPS</i>	Endangered	Yes
Cusk (<i>Brosme brosme</i>)	Candidate	Yes
Alewife (<i>Alosa pseudoharengus</i>)	Candidate	Yes
Blueback herring (<i>Alosa aestivalis</i>)	Candidate	Yes
Pinnipeds		
Harbor seal (<i>Phoca vitulina</i>)	Protected (MMPA)	Yes
Gray seal (<i>Halichoerus grypus</i>)	Protected (MMPA)	Yes
Harp seal (<i>Phoca groenlandicus</i>)	Protected (MMPA)	Yes
Hooded seal (<i>Cystophora cristata</i>)	Protected (MMPA)	Yes
Critical Habitat		
North Atlantic Right Whale	ESA (Protected)	No
Northwest Atlantic DPS of Loggerhead Sea Turtle	ESA (Protected)	No

¹ A strategic stock is defined under the MMPA as a marine mammal stock for which: (1) the level of direct human-caused mortality exceeds the potential biological removal level; (2) based on the best available scientific information, is declining and is likely to be listed as a threatened species under the ESA within the foreseeable future; and/or (3) is listed as a threatened or endangered species under the ESA, or is designated as depleted under the MMPA (Section 3 of the MMPA of 1972).

² There are 2 species of pilot whales: short finned (*G. melas melas*) and long finned (*G. macrorhynchus*). Due to the difficulties in identifying the species at sea, they are often just referred to as *Globicephala spp.*

³ This includes the Western North Atlantic Offshore, Northern Migratory Coastal, and Southern Migratory Coastal Stocks of Bottlenose Dolphins. See Waring *et al.* (2016) and Hayes *et al.* (2017) for further details.

6.4.1 Species and Critical Habitat Not Likely to be Affected by the Proposed Action

Based on available information, it has been determined that the action being proposed in the summer flounder fishery is not likely to affect blue whales, sperm whales, shortnose sturgeon, Atlantic spotted dolphins, striped dolphins, pygmy sperm whales, dwarf sperm whales, or hawksbill sea turtles. This determination was made because either the occurrence of the species is not known to overlap with the summer flounder fisheries and/or there have never been documented interactions between the species and the primary gear type (i.e., sink gillnet, hook and line, bottom trawl) used to prosecute the summer flounder fishery (NMFS 2013; NMFS NEFSC FSB 2015, 2016, 2017; Palmer 2017; see: http://www.nefsc.noaa.gov/fsb/take_reports/nefop.html and <http://www.nmfs.noaa.gov/pr/sars/region.htm>). Critical habitats not likely to be affected include the Northwest Atlantic DPS of loggerhead sea turtle and the North Atlantic right whale. The following sections provide information to support this rationale.

6.4.1.1 Shortnose Sturgeon

Shortnose sturgeon are benthic fish that mainly occupy the deep channel sections of large rivers. They occupy rivers along the western Atlantic coast from St. Johns River in Florida to the Saint

John River in New Brunswick, Canada. The species is anadromous in the southern portion of its range (i.e., south of Chesapeake Bay), while some northern populations are amphidromous (NMFS 2010a). Given the range of the species (remaining mostly in the river systems, with some coastal migrations between rivers), and the fact that the summer flounder fishery does not operate in or near the rivers where concentrations of shortnose sturgeon are most likely found, direct (e.g., interaction with gear) and indirect (e.g., prey removal, habitat modification) impacts to shortnose sturgeon from the summer flounder fishery are not expected.

6.4.1.2 *Hawksbill Sea Turtle*

Hawksbill sea turtles are uncommon in the northern waters of the continental United States (U.S.), but are widely distributed throughout the Caribbean Sea, off the coasts of Florida and Texas in the continental U.S., in the Greater and Lesser Antilles, and along the mainland of Central America south to Brazil (Lund 1985; Plotkin and Amos 1988; Amos 1989; Groombridge and Luxmoore 1989; Plotkin and Amos 1990; NMFS and USFWS 2013a; Meylan and Donnelly 1999). Hawksbills prefer tropical coral reefs, such as those found in the Caribbean and Central America. Nesting areas in the western North Atlantic include Puerto Rico and the Virgin Islands. There are accounts of hawksbills in South Florida and, although individuals have been sighted along the East Coast as far north as Massachusetts,¹⁷ sightings north of Florida are rare. Thus, the summer flounder fishery does not occur in waters typically used by hawksbill sea turtles.

6.4.1.3 *Blue Whale*

Blue whales do not regularly occur in waters of the U.S. EEZ (Waring *et al.* 2010). Calving for the species occurs in low latitude waters and therefore, outside of the area where the summer flounder fishery operates. Blue whales feed on euphausiids (krill) which are too small to be captured in fishing gear (Sears 2002) and therefore, it is unlikely that the forage base of blue whales will be removed by the operation of the fishery. Based on this information, the summer flounder fishery will not overlap with blue whale occurrence or habitat, and therefore, direct (e.g., interaction with gear) or indirect (e.g., prey removal, habitat modification) impacts to blue whales from the operation of the summer flounder fishery are not expected. This conclusion is supported further by the fact that there have been no observed U.S. Atlantic fishery-related mortalities or serious injuries to blue whales to date (Waring *et al.* 2010; http://www.nefsc.noaa.gov/fsb/take_reports/nefop.html).

6.4.1.4 *Sperm Whale*

Sperm whales regularly occur in waters of the U.S. EEZ, but primarily are found on the continental shelf edge, over the continental slope, and into mid-ocean regions (Waring *et al.* 2015). The average depth at which sperm whales were observed during the Cetacean and Turtle Assessment Program (CeTAP) surveys of the Mid- and North Atlantic areas was 1,792 meters (CeTAP 1982). Female sperm whales and young males almost always inhabit waters deeper than 1,000 meters and at latitudes less than 40° N (Whitehead 2002). Fishing effort for summer flounder generally occurs outside of the preferred depths of sperm whales. In addition, as the prey base of sperm whales is located in deep ocean regions (Whitehead 2002), any overlap in prey distribution and the summer flounder fishery is not expected and therefore, it is unlikely that the forage base of sperm whales

¹⁷ Hawksbills have been found stranded as far north as Cape Cod, Massachusetts; however, these strandings were observed after hurricanes or offshore storms.

will be removed by the operation of the fishery. Calving for the species also occurs in low latitude waters and therefore, outside of the area where the summer flounder fishery operates. Based on this information, the summer flounder fishery is not expected to overlap with sperm whale occurrence or habitat, and therefore, direct (e.g., interaction with gear) or indirect (e.g., prey removal, habitat modification) effects to sperm whales from the operation of any of the Greater Atlantic Region fisheries are not expected. This conclusion is supported further by the fact that there have been no observed U.S. Atlantic fishery-related interactions with sperm whales to date (http://www.nefsc.noaa.gov/fsb/take_reports/nefop.html; Waring *et al.* 2014a, 2015).

6.4.1.5 *Pygmy Sperm Whale, Dwarf Sperm Whale, Striped Dolphin, Atlantic Spotted Dolphin, and Beaked Whales*

Pygmy and dwarf sperm whales occur primarily in oceanic waters ($\geq 1,000$ meters), with some incursions in continental shelf waters (Mullin and Fulling 2003; Waring *et al.* 2014a; Hayes *et al.* 2017). Striped dolphins are distributed along the continental shelf edge from Cape Hatteras to the southern margin of Georges Bank, and also occur offshore over the continental slope and rise in the mid-Atlantic region (CETAP 1982; Mullin and Fulling 2003; Waring *et al.* 2014a). Striped dolphins were observed during the CeTAP surveys along the 1,000 m depth contour in all seasons (CETAP 1982). Atlantic spotted dolphins regularly occur in continental shelf waters south of Cape Hatteras; however, in waters north of Cape Hatteras, this species of dolphin occurs in continental shelf edge and continental slope waters ($\geq 1,000$ meters; Payne *et al.* 1984; Mullin and Fulling 2003; Waring *et al.* 2014a). Beaked whale sightings in the Greater Atlantic Region have occurred principally along the continental shelf edge and deeper oceanic waters (CETAP 1982; Waring *et al.* 2014a; Waring *et al.* 2015; Hamazaki 2002; Palka 2006).

Taking into consideration the above information, it is evident that these dolphin and whale species are primarily deep water ($\geq 1,000$ meters), continental shelf edge, and/or slope inhabitants. The summer flounder fishery occurs in waters less than 800 meters and is therefore outside of the preferred depths of these cetacean species. In addition, interactions with these cetacean species have only been observed in fisheries prosecuted by pelagic longline and/or pelagic drift gillnet; these gear types are not used in the summer flounder fishery. None of the predominant summer flounder gear types (e.g., bottom trawl, sink gillnet, handlines) are expected pose an interaction risk to these species. Based on this information, and the fact that there is a low co-occurrence between the summer flounder fishery and the cetacean species noted above, direct (e.g., interaction with gear) or indirect (e.g., prey removal, habitat modification) effects to these species are not expected.

6.4.1.6 *North Atlantic Right Whale Critical Habitat*

On January 27, 2016 (81 FR 4837) critical habitat for North Atlantic right whales was expanded to encompass approximately 29,763 square nautical miles of marine habitat in the Gulf of Maine and Georges Bank region (Unit 1: foraging habitat) and off the Southeast U.S. coast (Unit 2: calving habitat). In the final rule to expand North Atlantic right whale critical habitat (81 FR 4837), as well as in the ESA section 4(b)(2) report issued by NMFS in December 2015 (NMFS 2015a), it was determined that the continued operation of any Greater Atlantic Region fishery will not affect the physical or biological features that are essential to the conservation of North Atlantic right whales. Specifically, in Unit 1, the essential biological and physical features include physical oceanographic conditions and structures of the Gulf of Maine and Georges Bank regions (e.g., currents, circulation patterns, bathymetric features, and temperature), low flow velocities in Jordan, Wilkinson, and Georges Basins, and dense aggregations of *Calanus finmarchicus* (i.e., late

stage in Gulf of Maine and Georges Bank region; diapause phase in Jordan, Wilkinson, and Georges Basins) (NMFS 2015b). In Unit 2, the essential biological and physical features include calm sea surface conditions, sea surface temperatures between 7°C to 17°C, and depths between 6 to 28 meters (NMFS 2015b). As summer flounder fisheries will not destroy or affect the availability of copepods, and will not modify or destroy any physical features identified as essential in Unit 1 or 2 (e.g., temperature, depth, physical oceanographic conditions, currents), the continued operation of the summer flounder fishery will not destroy or adversely modify North Atlantic right whale critical habitat (NMFS 2015a; NMFS 2015b; 81 FR 4837 (January 27, 2016)).

6.4.1.7 Northwest Atlantic Distinct Population Segment (NWA DPS) of Loggerhead Sea Turtle DPS Critical Habitat

NMFS issued a final rule to designate critical habitat for the Northwest Atlantic Ocean DPS of the loggerhead sea turtle within the Atlantic Ocean and the Gulf of Mexico on July 10, 2014 (79 FR 39856). Specific areas designated include 38 occupied marine areas within the range of the Northwest Atlantic Ocean DPS. These areas contain one or a combination of five habitat types: nearshore reproductive habitat, overwintering habitat, breeding habitat, migratory habitat (i.e., constricted migratory corridor), and/or *Sargassum* habitat.¹⁸

The area of operation of the 13 Greater Atlantic Region fisheries overlaps with one or more of the five types of marine areas identified as critical habitat for the NWA DPS of loggerhead sea turtles. However, since the vast majority of fishing activities for summer flounder occur north of Cape Hatteras, North Carolina, there is very little overlap with more than just the northernmost portions of the *Sargassum* and migratory habitat areas. The summer flounder fishery expends little effort in areas identified as overwintering, breeding, and nearshore reproductive critical habitat (NMFS 2013; NMFS 2014b).

The summer flounder fishery is primarily prosecuted with bottom trawls, with a small portion of commercial effort coming from sink gillnets, handlines, and other very minor gear types. While these gears are known to be deployed within certain areas of the critical habitat for NWA DPS loggerheads, the occasional placement and wide-ranging operation of these gear types within these fisheries is not expected to prevent the passage of loggerheads through the critical habitat areas or inhibit their usage of those areas. While commercial fishing gear (mainly trawls and gillnets) may have some interactions with pelagic *Sargassum* during deployment and retrieval, these effects will be temporary and isolated in nature and, because of the fluid nature of the pelagic environment, recovery time is expected to be rapid. In regards to effects on benthic habitat in the other four marine areas, there is no evidence that bottom trawls or any other types of gears used by the summer flounder fishery will adversely affect sandy, muddy, or hard bottom habitats where NWA DPS loggerheads routinely forage and rest (NREFHSC 2002). Fishing vessel movements are not expected to significantly alter the physical or biological features of the critical habitat areas to levels that would affect life history patterns of individual turtles or the health of prey species found in these habitats. Additionally, there is no evidence that the fishery is likely to impact water depth, water temperature, or any other physical or biological features identified as essential for the conservation of critical habitat for the NWA DPS of loggerhead sea turtles in these regions. Based on this information, the summer flounder fishery is not expected to affect the essential physical or biological features of any marine area designated as critical habitat for the NWA DPS of

¹⁸ Detailed maps of the marine critical habitat are available online at: http://www.nmfs.noaa.gov/pr/species/turtles/criticalhabitat_loggerhead.htm

loggerhead sea turtles. Thus, none of the Greater Atlantic Region fisheries are likely to adversely modify or destroy designated critical habitat for the NWA DPS of loggerhead sea turtles (NMFS 2014b; 79 FR 39856 (July 10, 2014)).

6.4.2 Species Potentially Affected by the Proposed Action

Table 25 provides a list of protected species of sea turtle, marine mammal, and fish species present in the affected environment of the summer flounder, scup, and black seabass fisheries, and that may also be affected by the proposed action; that is, have the potential to become entangled or bycaught in the fishing gear used to prosecute the fishery. To aid in the identification of MMPA protected species potentially affected by the action, the MMPA List of Fisheries and marine mammal stock assessment reports for the Atlantic Region were referenced (<http://www.nmfs.noaa.gov/pr/sars/region.htm>; <http://www.nmfs.noaa.gov/pr/interactions/fisheries/lof.html>). To aid in identifying ESA listed species potentially affected by the action, the 2013 Biological Opinion issued by NMFS on the operation of seven commercial fisheries, including the summer flounder, scup, and black seabass fisheries, and its impact on ESA listed species was referenced (NMFS 2013). The 2013 Opinion, which considered the best available information on ESA listed species and observed or documented ESA listed species interactions with gear types used to prosecute the 7 FMPs (e.g., gillnet, bottom trawl, and pot/trap), concluded that the seven fisheries may adversely affect, but was not likely to jeopardize the continued existence of any ESA listed species. The Opinion included an incidental take statement (ITS) authorizing the take of specific numbers of ESA listed species of sea turtles, Atlantic salmon, and Atlantic sturgeon. Reasonable and prudent measures and terms and conditions were also issued with the ITS to minimize impacts of any incidental take.

Up until recently, the 2013 Opinion remained in effect; however, new information on North Atlantic right whales has been made available that may reveal effects of the fisheries analyzed in the 2013 Opinion that may not have been previously considered. As a result, per an October 17, 2017, ESA 7(a)(2)/7(d) memo issued by NMFS, the 2013 Opinion has been reinitiated. However, the October 17, 2017, memo concludes that allowing these fisheries to continue during the reinitiation period will not increase the likelihood of interactions with ESA listed species above the amount that would otherwise occur if consultation had not been reinitiated, and therefore, the continuation of these fisheries during the reinitiation period would not be likely to jeopardize the continued existence of any ESA listed species. Until replaced, the summer flounder, scup, and black seabass FMP is currently covered by the incidental take statement authorized in NMFS 2013 Opinion.

As the primary concern for both MMPA protected and ESA listed species is the potential for the fishery to interact (e.g., bycatch, entanglement) with these species it is necessary to consider (1) species occurrence in the affected environment of the fishery and how the fishery will overlap in time and space with this occurrence; and (2) data and observed records of protected species interaction with particular fishing gear types, in order to understand the potential risk of an interaction. Information on species occurrence in the affected environment of the summer flounder, scup, and black seabass FMP is provided below, while information on protected species interactions with specific fishery gear that is likely to be used in the proposed action (i.e., summer flounder gear types) is provided in section 6.4.3.

6.4.2.1 *Sea Turtles*

Kemp's ridley, leatherback, the North Atlantic DPS of green and the Northwest Atlantic DPS of loggerhead sea turtle are the four ESA-listed species of sea turtles that occur in the area of operation for the summer flounder fishery. Three of the four species are hard-shelled turtles (i.e., green, loggerhead, and Kemp's ridley). Additional background information on the range-wide status, descriptions, and life histories of these four species can be found in a number of published documents, including sea turtle status reviews and biological reports (NMFS and USFWS 1995; Hirth 1997; Turtle Expert Working Group [TEWG] 1998, 2000, 2007, 2009; NMFS and USFWS 2007a, 2007b; Conant *et al.* 2009; NMFS and USFWS 2013b; NMFS and USFWS 2015; Seminoff *et al.* 2015), and recovery plans for the loggerhead sea turtle (Northwest Atlantic DPS; NMFS and USFWS 2008), leatherback sea turtle (NMFS and USFWS 1992, 1998a), Kemp's ridley sea turtle (NMFS *et al.* 2011), and green sea turtle (NMFS and USFWS 1991, 1998b).

A general overview of sea turtle occurrence and distribution in waters of the Northwest Atlantic Ocean is provided below to assist in understanding how the summer flounder fishery may overlap in time and space with sea turtles. Maps depicting the range wide distribution and occurrence of sea turtles in the Greater Atlantic Region can be found at the following websites: <https://www.greateratlantic.fisheries.noaa.gov/protected/section7/listing/index.html>; <http://marinecadastre.gov/>; and, <http://seamap.env.duke.edu/>.

Hard-shelled Sea Turtles

In U.S. Northwest Atlantic waters, hard-shelled turtles commonly occur throughout the continental shelf from Florida to Cape Cod, Massachusetts, although their presence varies with the seasons due to changes in water temperature (Shoop and Kenney 1992; Epperly *et al.* 1995a, 1995b; Braun and Epperly 1996; Mitchell *et al.* 2003; Braun-McNeill *et al.* 2008; TEWG 2009). While hard-shelled turtles are most common south of Cape Cod, MA, they are known to occur in the Gulf of Maine. Loggerheads, the most common hard-shelled sea turtle in the Greater Atlantic Region, feed as far north as southern Canada. Loggerheads have been observed in waters with surface temperatures of 7 °C to 30 °C, but water temperatures ≥ 11 °C are most favorable (Shoop and Kenney 1992; Epperly *et al.* 1995b). Sea turtle presence in U.S. Atlantic waters is also influenced by water depth. While hard-shelled turtles occur in waters from the beach to beyond the continental shelf, they are most commonly found in neritic waters of the inner continental shelf (Mitchell *et al.* 2003; Braun-McNeill and Epperly 2002; Morreale and Standora 2005; Blumenthal *et al.* 2006; Hawkes *et al.* 2006; McClellan and Read 2007; Mansfield *et al.* 2009; Hawkes *et al.* 2011; Griffin *et al.* 2013).

Hard-shelled sea turtles occur year-round in waters off Cape Hatteras, North Carolina and south. As coastal water temperatures warm in the spring, loggerheads begin to migrate to inshore waters of the southeast United States and also move up the Atlantic Coast (Epperly *et al.* 1995a, 1995b, 1995c; Braun-McNeill and Epperly 2002; Morreale and Standora 2005; Griffin *et al.* 2013), occurring in Virginia foraging areas as early as late April and on the most northern foraging grounds in the Gulf of Maine in June (Shoop and Kenney 1992). The trend is reversed in the fall as water temperatures cool. The large majority leave the Gulf of Maine by September, but some remain in Mid-Atlantic and Northeast areas until late fall. By December, sea turtles have migrated south to waters offshore of NC, particularly south of Cape Hatteras, and further south (Shoop and Kenney 1992; Epperly *et al.* 1995b; Hawkes *et al.* 2011; Griffin *et al.* 2013).

Leatherback Sea Turtles

Leatherbacks, a pelagic species, are known to use coastal waters of the U.S. continental shelf and to have a greater tolerance for colder water than hard-shelled sea turtles (James *et al.* 2005; Eckert *et al.* 2006; Murphy *et al.* 2006; NMFS and USFWS 2013b; Dodge *et al.* 2014). Leatherback sea turtles engage in routine migrations between northern temperate and tropical waters (NMFS and USFWS 1992; James *et al.* 2005; James *et al.* 2006; Dodge *et al.* 2014). They are found in more northern waters (i.e., Gulf of Maine) later in the year (i.e., similar time frame as hard-shelled sea turtles), with most leaving the Northwest Atlantic shelves by mid-November (James *et al.* 2005; James *et al.* 2006; Dodge *et al.* 2014).

6.4.2.2 Large Whales

Table 26 provides the species of large whales that occur in the area of operation for the summer flounder fishery. For additional information on the biology, status, and range wide distribution of each whale species please refer to NMFS 1991, 2005, 2010b, 2011a, 2012; and marine mammal stock assessment reports provided at: <http://www.nmfs.noaa.gov/pr/sars/region.htm>.

Table 26: Large whale species present in the area of operation for the summer flounder fishery.

Species	Listed Under the ESA	Protected Under the MMPA	MMPA Strategic Stock¹
North Atlantic Right Whale	Yes-Endangered	Yes	Yes
Humpback Whale	No	Yes	No
Fin Whale	Yes-Endangered	Yes	Yes
Sei Whale	Yes-Endangered	Yes	Yes
Minke Whale	No	Yes	No

Notes:

¹A strategic stock is defined under the MMPA as a marine mammal stock: for which the level of direct human-caused mortality exceeds the potential biological removal level; which, based on the best available scientific information, is declining and is likely to be listed as a threatened species under the ESA within the foreseeable future; or which is listed as a threatened or endangered species under the ESA, or is designated as depleted under the MMPA.

Source: Hayes et al. 2017

Right, humpback, fin, sei, and minke whales are found throughout the waters of the Northwest Atlantic Ocean. In general, these species follow an annual pattern of migration between low latitude (south of 35°N) wintering/calving grounds and high latitude spring/summer foraging grounds (primarily north of 41°N; Hayes et al. 2017; NMFS 1991, 2005, 2010b, 2011a, 2012). This, however, is a simplification of whale movements, particularly as it relates to winter movements. It remains unknown if all individuals of a population migrate to low latitudes in the winter, although, increasing evidence suggests that for some species (e.g., right and humpback whales), some portion of the population remains in higher latitudes throughout the winter (Hayes et al. 2017; Khan *et al.* 2009, 2010, 2011, 2012; Brown *et al.* 2002; NOAA 2008; Cole *et al.* 2013; Clapham *et al.* 1993; Swingle *et al.* 1993; Vu *et al.* 2012). Although further research is needed to provide a clearer understanding of large whale movements and distribution in the winter, the distribution and movements of large whales to foraging grounds in the spring/summer is well understood. Movements of whales into higher latitudes coincide with peak productivity in these waters. As a result, the distribution of large whales in higher latitudes is strongly governed by prey

availability and distribution, with large numbers of whales coinciding with dense patches of preferred forage (Mayo and Marx 1990; Kenney *et al.* 1986, 1995; Baumgartner *et al.* 2003; Baumgartner and Mate 2003; Payne *et al.* 1986, 1990; Brown *et al.* 2002; Kenney and Hartley 2001; Schilling *et al.* 1992). For additional information on the biology, status, and range wide distribution of each whale species please refer to: Hayes *et al.* 2017; NMFS 1991, 2005, 2010b, 2011a, 2012.

To further assist in understanding how fisheries may overlaps in time and space with the occurrence of large whales, a general overview on species occurrence and distribution in the area of operation for the summer flounder fishery is provided in Table 27.

Table 27: Large whale occurrence in the area of operation for the summer flounder fishery.

Species	Prevalence and Approximate Months of Occurrence
<p style="text-align: center;">North Atlantic Right Whale</p>	<ul style="list-style-type: none"> • Distributed throughout all continental shelf waters from the Gulf of Maine to the South Atlantic Bight throughout the year; however, increasing evidence of year-round presence in the Gulf of Maine. • New England waters (Gulf of Maine and Georges Bank regions) = Foraging Grounds (January through October). Seasonally important foraging grounds include but are not limited to: <ul style="list-style-type: none"> › Cape Cod Bay (January-April); › Great South Channel (April-June); › western Gulf of Maine (April-May, and July-October); › Jordan Basin (August-October); › Wilkinson Basin (April-July); › northern edge of Georges Bank (May-July); • Mid-Atlantic waters: Migratory pathway to/from northern (high latitude) foraging and southern calving grounds. • Increasing evidence of wintering areas (approximately November – January) in: <ul style="list-style-type: none"> › Cape Cod Bay; › Jeffreys and Cashes Ledges; › Jordan Basin; and › Massachusetts Bay (e.g., Stellwagen Bank).
<p style="text-align: center;">Humpback</p>	<ul style="list-style-type: none"> • Distributed throughout all continental shelf waters of the Mid-Atlantic (Southern New England included), Gulf of Maine, and Georges Bank throughout the year. • New England waters (Gulf of Maine and Georges Bank regions) = Foraging Grounds (March-November). • Mid-Atlantic waters: Migratory pathway to/from northern (high latitude) foraging and southern (West Indies) calving grounds. • Increasing evidence of whales remaining in mid- and high- latitudes throughout the winter. Specifically, increasing evidence of wintering areas (for juveniles) in Mid-Atlantic (e.g., waters in the vicinity of Chesapeake and Delaware Bays; peak presence approximately January through March) and Southeastern coastal waters.
<p style="text-align: center;">Fin</p>	<ul style="list-style-type: none"> • Distributed throughout all continental shelf waters of the Mid-Atlantic (Southern New England included), Gulf of Maine, and Georges Bank throughout the year. • Mid-Atlantic waters: <ul style="list-style-type: none"> › Migratory pathway to/from northern (high latitude) foraging and southern (low latitude) calving grounds; and › Possible offshore calving area (October-January).

Species	Prevalence and Approximate Months of Occurrence
	<ul style="list-style-type: none"> • New England (Gulf of Maine and Georges Bank)/ Southern New England waters = Foraging Grounds (greatest densities March-August; lower densities September-November). Important foraging grounds include: <ul style="list-style-type: none"> › Massachusetts Bay (esp. Stellwagen Bank); › Great South Channel; › Waters off Cape Cod (~40-50 meter contour); › Gulf of Maine; › Perimeter (primarily eastern) of Georges Bank; and › Mid-shelf area off the east end of Long Island. • Evidence of wintering areas in mid-shelf areas east of New Jersey Stellwagen Bank; and eastern perimeter of Georges Bank.
Sei	<ul style="list-style-type: none"> • Uncommon in shallow, inshore waters of the Mid-Atlantic (SNE included), Georges Bank, and Gulf of Maine; however, occasional incursions during peak prey availability and abundance. • Primarily found in deep waters along the shelf edge, shelf break, and ocean basins between banks. • Spring through summer, found in greatest densities in offshore waters of the Gulf of Maine and Georges Bank; sightings concentrated along the northern, eastern (into Northeast Channel) and southwestern (in the area of Hydrographer Canyon) edge of Georges Bank.
Minke	<ul style="list-style-type: none"> • Widely distributed throughout continental shelf waters (<100m deep) of the Mid-Atlantic (Southern New England included), Gulf of Maine, and Georges Bank. • Most common in the EEZ from spring through fall, with greatest abundance found in New England waters
<p><i>Sources:</i> NMFS 1991, 2005, 2010b, 2011a, 2012; Hain <i>et al.</i> 1992; Payne <i>et al.</i> 1984; Good 2008; Pace and Merrick 2008; McLellan <i>et al.</i> 2004; Hamilton and Mayo 1990; Schevill <i>et al.</i> 1986; Watkins and Schevill 1982; Payne <i>et al.</i> 1990; Winn <i>et al.</i> 1986; Kenney <i>et al.</i> 1986, 1995; Khan <i>et al.</i> 2009, 2010, 2011, 2012; Brown <i>et al.</i> 2002; NOAA 2008; 50 CFR 224.105; CETAP 1982; Clapham <i>et al.</i> 1993; Swingle <i>et al.</i> 1993; Vu <i>et al.</i> 2012; Baumgartner <i>et al.</i> 2011; Cole <i>et al.</i> 2013; Risch <i>et al.</i> 2013; Hayes <i>et al.</i> 2017; 81 FR 4837(January 27, 2016); NMFS 2015b; Bort <i>et al.</i> 2015.</p>	

6.4.2.3 Small Cetaceans

Table 28 provides the species of small cetaceans that occur in the area of operation for the summer flounder commercial fishery.

Table 28: Small cetacean species that occur in the area of operation for the summer flounder fishery. Animals in bold are MMPA strategic stocks.

Species	Listed Under the ESA	Protected Under the MMPA	MMPA Strategic Stock
Atlantic White-Sided Dolphin	No	Yes	No
Short-Finned Pilot Whale	No	Yes	Yes
Long-Finned Pilot Whale	No	Yes	Yes
Risso's Dolphin	No	Yes	No
Short-Beaked Common Dolphin	No	Yes	No
Harbor Porpoise	No	Yes	No
Bottlenose Dolphin (Western North Atlantic Offshore Stock)	No	Yes	No
Bottlenose Dolphin (Western North Atlantic Northern Migratory Coastal Stock)	No	Yes	Yes¹
Bottlenose Dolphin (Western North Atlantic Southern Migratory Coastal Stock)	No	Yes	Yes¹

Notes:

¹ Considered a strategic stock as stocks are designated as depleted under the MMPA. Depleted is defined by the MMPA as any stock in which: (1) the Secretary, after consultation with the Marine Mammal Commission and the Committee of Scientific Advisors on Marine Mammals, determines that a species or population stock is below its optimum sustainable population; (2) a State, to which authority for the conservation and management of a species or population stock is transferred under section 109, determines that such species or stock is below its optimum sustainable population; or (3) a species or population stock is listed as an endangered species or a threatened species under the ESA.

Source: Waring *et al.* 2016; Hayes *et al.* 2017.

Small cetaceans can be found throughout the year in waters of the Northwest Atlantic Ocean (Waring *et al.* 2016; Hayes *et al.* 2017). Within this range, however, there are seasonal shifts in species distribution and abundance. To further assist in understanding how fisheries may overlap in time and space with the occurrence of small cetaceans, a general overview of species occurrence and distribution in the area of operation for the summer flounder fishery is provided in Table 29. For additional information on the biology, status, and range-wide distribution of each species please refer to Waring *et al.* (2016) and Hayes *et al.* 2017.

Table 29: Small cetacean occurrence in the area of operation for the summer flounder fishery.

Species	Prevalence and Approximate Months of Occurrence
Atlantic White-Sided Dolphin	<ul style="list-style-type: none"> • Distributed throughout the continental shelf waters (primarily to 100 meter isobath) of the Mid-Atlantic (north of 35°N), Southern New England, Georges Bank, and Gulf of Maine; however, most common in continental shelf waters from Hudson Canyon (~ 39°N) to Georges Bank, and into the Gulf of Maine. • January-May: low densities found from Georges Bank to Jeffreys Ledge. • June-September: large densities found from Georges Bank through the Gulf of Maine. • October-December: intermediate densities found from southern Georges Bank to southern Gulf of Maine. • South of Georges Bank (Southern New England and Mid-Atlantic), low densities found year round, with waters off Virginia and NC representing southern extent of species range during winter months.
Short-Beaked Common Dolphin	<ul style="list-style-type: none"> • Regularly found throughout the continental shelf-edge-slope waters (primarily between the 100-2,000 meter isobaths) of the Mid-Atlantic, Southern New England, and Georges Bank (esp. in Oceanographer, Hydrographer, Block, and Hudson Canyons). • Less common south of Cape Hatteras, NC, although schools have been reported as far south as the Georgia /South Carolina border. • January-May: occur from waters off Cape Hatteras, NC, to Georges Bank (35° to 42°N). • Mid-summer-fall: occur primarily on Georges Bank with small numbers present in the Gulf of Maine; Peak abundance found on Georges Bank in the autumn.
Risso's Dolphin	<ul style="list-style-type: none"> • Spring through fall: Distributed along the continental shelf edge from Cape Hatteras, NC, to Georges Bank. • Winter: distributed in the Mid-Atlantic Bight, extending into oceanic waters. • Rarely seen in the Gulf of Maine; primarily a Mid-Atlantic continental shelf edge species (can be found year round).
Harbor Porpoise	<ul style="list-style-type: none"> • Distributed throughout the continental shelf waters of the Mid-Atlantic (north of 35°N), Southern New England, Georges Bank, and Gulf of Maine. • July-September: concentrated in the northern Gulf of Maine (waters < 150 meters); low numbers can be found on Georges Bank. • October-December: widely dispersed in waters from NJ to Maine; seen from the coastline to deep waters (>1,800 meters). • January-March: intermediate densities in waters off NJ to NC; low densities found in waters off NY to Gulf of Maine. • April-June: widely dispersed from NJ to ME; seen from the coastline to deep waters (>1,800 meters).
Bottlenose Dolphin	<p><u>Western North Atlantic Offshore Stock</u></p> <ul style="list-style-type: none"> • Distributed primarily along the outer continental shelf and continental slope in the Northwest Atlantic from Georges Bank to FL. • Depths of occurrence: ≥40 meters <p><u>Western North Atlantic Northern Migratory Coastal Stock</u></p> <ul style="list-style-type: none"> • Warm water months (e.g., July-August): distributed from the coastal waters from the shoreline to approximately the 25-meter isobaths between the Chesapeake Bay mouth and Long Island, NY.

Species	Prevalence and Approximate Months of Occurrence
	<ul style="list-style-type: none"> • Cold water months (e.g., January-March): stock occupies coastal waters from Cape Lookout, NC, to the NC/VA border. <p><u>Western North Atlantic Southern Migratory Coastal Stock</u></p> <ul style="list-style-type: none"> • October-December: stock occupies waters of southern NC (south of Cape Lookout) • January-March: stock moves as far south as northern FL. • April-June: stock moves north to waters of NC. • July-August: stock is presumed to occupy coastal waters north of Cape Lookout, NC, to the eastern shore of VA.
Pilot Whales: Short- and Long-Finned	<p><u>Short-Finned Pilot Whales</u></p> <ul style="list-style-type: none"> • Except for area of overlap (see below), primarily occur south of 40°N (Mid-Atlantic and Southern New England waters); although low numbers have been found along the southern flank of Georges Bank, but no further than 41°N. • May through December (approximately): distributed primarily near the continental shelf break of the Mid-Atlantic and Southern New England; individuals begin shifting to southern waters (i.e., 35°N and south) beginning in the fall. <p><u>Long-Finned Pilot Whales</u></p> <ul style="list-style-type: none"> • Except for area of overlap (see below), primarily occur north of 42°N. • Winter to early spring (November through April): primarily distributed along the continental shelf edge-slope of the Mid-Atlantic, Southern New England, and Georges Bank. • Late spring through fall (May through October): movements and distribution shift onto/within Georges Bank, the Great South Channel, and Gulf of Maine. <p><u>Area of Species Overlap:</u> between approximately 38°N and 41°N.</p>
<p><i>Notes:</i> ¹ Information presented in table is representative of small cetacean occurrence in the Northwest Atlantic continental shelf waters out to the 2,000 meter isobath. <i>Sources:</i> Waring <i>et al.</i> 2016; Hayes <i>et al.</i> 2017, Payne and Heinemann 1993; Payne <i>et al.</i> 1984; Jefferson <i>et al.</i> 2009.</p>	

6.4.2.4 Pinnipeds

Table 30 provides the species of pinnipeds that occur in the area of operation for the summer flounder fishery.

Table 30: Pinniped species that occur in in the area of operation for the summer flounder fishery.

Species	Listed Under the ESA	Protected Under the MMPA	MMPA Strategic Stock
Harbor Seal	No	Yes	No
Gray Seal	No	Yes	No
Harp Seal	No	Yes	No
Hooded Seal	No	Yes	No
<i>Source:</i> Waring <i>et al.</i> 2007; Waring <i>et al.</i> 2014a, Hayes <i>et al.</i> 2017.			

Pinnipeds are found in the nearshore, coastal waters of the Northwest Atlantic Ocean. They are primarily found throughout the year or seasonally from New Jersey to Maine; however, increasing evidence indicates that some species (e.g., harbor seals) may be extending their range seasonally

into waters as far south as Cape Hatteras, North Carolina (35°N) (Waring *et al.* 2007, 2014a; Hayes *et al.* 2017). To further assist in understanding how fisheries may overlap in time and space with the occurrence of pinnipeds, a general overview of species occurrence and distribution in the area of operation for the summer flounder fishery is provided in the following table (Table 31). For additional information on the biology, status, and range-wide distribution of each species of pinniped please refer to Waring *et al.* (2007), Waring *et al.* (2014a), and Hayes *et al.* 2017.

Table 31: Pinniped occurrence in the area of operation for the summer flounder fishery.

Species	Prevalence
Harbor Seal	<ul style="list-style-type: none"> Primarily distributed in waters from NJ to ME; however, increasing evidence indicates that their range is extending into waters as far south as Cape Hatteras, NC (35°N). Year Round: waters of ME September-May: waters from New England to NJ.
Gray Seal	<ul style="list-style-type: none"> Distributed in waters from NJ to ME. Year Round: waters from ME to MA. September-May: waters from Rhode Island to NJ.
Harp Seal	<ul style="list-style-type: none"> Winter-Spring (approximately January-May): waters from ME to NJ.
Hooded Seal	<ul style="list-style-type: none"> Winter-Spring (approximately January-May): waters of New England.
<i>Sources: Waring et al. 2007 (for hooded seals); Waring et al. 2014a; Hayes et al. 2017.</i>	

6.4.2.5 Atlantic Sturgeon

Table 32 lists the five DPSs of Atlantic sturgeon likely to occur in the Greater Atlantic Region. For additional information on the biology, status, and range-wide distribution of each distinct population segment please refer to 77 FR 5880 and 77 FR 5914 (finalized February 6, 2012), as well as the Atlantic Sturgeon Status Review Team’s (ASSRT) 2007 status review of Atlantic sturgeon.

Table 32: Atlantic Sturgeon DPSs that occur in the area of operation for the summer flounder fishery.

Species	Listed Under the ESA
Gulf of Maine (GOM) DPS	threatened
New York Bight (NYB) DPS	endangered
Chesapeake Bay (CB) DPS	endangered
Carolina DPS	endangered
South Atlantic (SA) DPS	endangered

The marine range of U.S. Atlantic sturgeon extends from Labrador, Canada, to Cape Canaveral, Florida. Atlantic sturgeon from all five DPSs have the potential to be located anywhere in this marine range (See Figure 20; ASSRT 2007; Dovel and Berggren 1983; Dadswell *et al.* 1984; Kynard *et al.* 2000; Stein *et al.* 2004a; Dadswell 2006; Laney *et al.* 2007; Dunton *et al.* 2010; Dunton *et al.* 2012; Dunton *et al.* 2015; Erickson *et al.* 2011; Wirgin *et al.* 2012; O’Leary *et al.* 2014; Waldman *et al.* 2013; Wirgin *et al.* 2015a,b).



Figure 20: Geographic Locations for the Five ESA-listed DPSs of Atlantic Sturgeon (NMFS 2013).

Based on fishery-independent and -dependent data, as well as data collected from tracking and tagging studies Atlantic sturgeon appear to primarily occur inshore of the 50-meter depth contour (Stein *et al.* 2004 a,b; Erickson *et al.* 2011; Dunton *et al.* 2010); however, Atlantic sturgeon are not restricted to these depths, as excursions into deeper continental shelf waters have been documented (Timoshkin 1968; Collins and Smith 1997; Stein *et al.* 2004a,b; Dunton *et al.* 2010; Erickson *et al.* 2011). Data from fishery-independent surveys and tagging and tracking studies also indicate that Atlantic sturgeon undertake seasonal movements along the coast. For instance, satellite-tagged adult sturgeon from the Hudson River are found to have concentrated in the southern part of the Mid-Atlantic Bight, at depths greater than 20 meters, during winter and spring, while in the summer and fall, Atlantic sturgeon concentrations shifted to the northern portion of the Mid-Atlantic Bight at depths less than 20 meters (Erickson *et al.* 2011). A similar seasonal trend was found by Dunton *et al.* 2010. Analysis of fishery-independent survey data indicated a coastwide distribution of Atlantic sturgeon during the spring and fall; a southerly (e.g., North Carolina, Virginia) distribution during the winter; and a centrally located (e.g., Long Island to Delaware) distribution during the summer. Although studies such as Erickson *et al.* (2011) and Dunton *et al.* (2010) provide some indication that Atlantic sturgeon are undertaking seasonal movements horizontally and vertically along the U.S. eastern coastline, there is no evidence to date that all Atlantic sturgeon make these seasonal movements. For instance, during inshore surveys conducted by the Northeast Fisheries Science Center in the Gulf of Maine, Atlantic

sturgeon have been caught in the fall, winter, and spring between the Saco and Kennebec Rivers (Dunton *et al.* 2010; Wipplehauser 2012).

Within the marine range of Atlantic sturgeon, several marine aggregation areas have been identified adjacent to estuaries and/or coastal features formed by bay mouths and inlets along the U.S. eastern seaboard. Depths in these areas are generally no greater than 25 meters (Stein *et al.* 2004a; Laney *et al.* 2007; Dunton *et al.* 2010; Erickson *et al.* 2011). Although additional studies are still needed to clarify why these particular sites are chosen by Atlantic sturgeon, there is some indication that they may serve as thermal refuges, wintering sites, or marine foraging areas (Stein *et al.* 2004a; Dunton *et al.* 2010; Erickson *et al.* 2011). The following are the currently known marine aggregation sites located within the operational range of Greater Atlantic Region fisheries:

- Waters off North Carolina, including Virginia/North Carolina border (Laney *et al.* 2007);
- Waters off the Chesapeake and Delaware Bays (Stein *et al.* 2004a; Dunton *et al.* 2010; Erickson *et al.* 2011; Oliver *et al.* 2013);
- New York Bight (e.g., waters off Sandy Hook, New Jersey, and Rockaway Peninsula, New York; Stein *et al.* 2004a; Dunton *et al.* 2010; Erickson *et al.* 2011; O’Leary *et al.* 2014);
- Massachusetts Bay (Stein *et al.* 2004a);
- Long Island Sound (Bain *et al.* 2000; Savoy and Pacileo 2003; Waldman *et al.* 2013);
- Connecticut River Estuary (Waldman *et al.* 2013);
- Kennebec River Estuary (Wipplehauser 2012; Whipplehauser and Squiers 2015).

In addition, since listing of the five Atlantic sturgeon DPSs, numerous genetic studies have addressed DPS distribution and composition in marine waters of the Northwest Atlantic (e.g., Wirgin *et al.* 2012; Wirgin *et al.* 2015a,b; Waldman *et al.* 2013; O’Leary *et al.* 2014; Dunton *et al.* 2012).¹⁹ These studies show that Atlantic sturgeon from multiple DPSs can be found at any single location along the Northwest Atlantic coast, with the Mid-Atlantic locations consistently comprised of all five DPSs (Wirgin *et al.* 2012; Wirgin *et al.* 2015a,b; Waldman *et al.* 2013; O’Leary *et al.* 2014; Dunton *et al.* 2012; Damon-Randall *et al.* 2013). Although additional studies are needed to further clarify the DPS distribution and composition in non-natal estuaries and coastal locations, these studies provide some initial insight on DPS distribution and co-occurrence in particular areas along the U.S. eastern seaboard.

6.4.2.6 Atlantic Salmon (Gulf of Maine DPS)

The wild populations of Atlantic salmon are listed as endangered under the ESA. Their freshwater range occurs in the watersheds from the Androscoggin River northward along the Maine coast to the Dennys River, while the marine range of the Gulf of Maine DPS extends from the Gulf of Maine (primarily northern portion of the Gulf of Maine) to the coast of Greenland (NMFS and USFWS 2005, 2016; Fay *et al.* 2006). In general, smolts, post-smolts, and adult Atlantic salmon may be present in the Gulf of Maine and coastal waters of Maine in the spring (beginning in April), and adults may be present throughout the summer and fall months (Baum 1997; Fay *et al.* 2006; USASAC 2004; Hyvarinen *et al.* 2006; Lacroix and McCurdy 1996; Lacroix *et al.* 2004, 2005; Reddin 1985; Reddin and Short 1991; Reddin and Friedland 1993, Sheehan *et al.* 2012; NMFS

¹⁹ Genetic studies did not sample Atlantic sturgeon south of North Carolina.

and USFWS 2005, 2016; Fay *et al.* 2006). For additional information on the on the biology, status, and range-wide distribution of the Gulf of Maine DPS of Atlantic salmon please refer to NMFS and USFWS 2005, 2016; Fay *et al.* 2006.

6.4.3 Fishing Gear and Interactions with Protected Resources

To understand the potential risk of an interaction, it is necessary to consider (1) species presence in the affected environment of the fishery and the overlap with fishing effort (see section 6.4.2); and (2) the potential for interaction with particular fishing gear types based on the available data. Information on species occurrence in the operational range of the summer flounder fishery has been provided in section 6.4.2, and therefore, this section will focus on information related to protected species interactions with fishery gear types.

Protected species described in Section 6.4.2 are all known to be vulnerable to interactions with various types of fishing gear. As this action only effects the commercial summer flounder fishery, only those gear types commonly used to target summer flounder are described here. The summer flounder commercial fishery primarily uses one or more of the following categories of fishing gear: bottom trawl; sink gillnets²⁰; and hook and line (rod and reel); see Table 24 in section 6.3.3.1. In the following sections, available information on protected species interactions with these gear types is provided. Please note, these sections are not a comprehensive review of all fishing gear types known to interact with a given species. The focus of this descriptions below is on bottom trawl gear given that the overwhelming majority (typically at least 90%) of landings originate from this gear type.

6.4.3.1 *Sea Turtles*

As described in Section 6.4.2.4.1, sea turtles are widely distributed in the waters of the Northwest Atlantic and often occupy many of the same ocean areas utilized for fishing. As a result, interactions with fishing gear are possible, with interactions having the potential to result in injury or mortality to the sea turtle. Below we provide the best available information on sea turtle interaction risks gear types primarily used in the commercial summer flounder fishery (i.e., trawl (bottom or mid-water), gillnet, and hook and line (rod/reel)).

Sea turtle interactions with trawl and gillnet gear have been observed in the Gulf of Maine, Georges Bank, and the Mid-Atlantic; however, most of the observed interactions have occurred in the Mid-Atlantic (see Murray 2011; Warden 2011a, b; Murray 2013; Murray 2015a, Murray 2015b). As few sea turtle interactions have been observed in the Gulf of Maine and Georges Bank regions of the Northwest Atlantic, there is insufficient data available to conduct a robust model-based analysis on sea turtle interactions with trawl and gillnet gear in these regions or produce a bycatch estimate for these regions. As a result, the bycatch estimates and discussion below are for trawl or gillnet gear in the Mid-Atlantic.

Bottom Trawl Gear

Bottom trawl gear poses an injury and mortality risk to sea turtles, specifically due to forced submergence (Sasso and Epperly 2006). Green, Kemp's ridley, leatherback, loggerhead, and unidentified sea turtles have been documented interacting (e.g., bycaught) with bottom trawl gear.

²⁰ Various types of pelagic gillnets are not considered in this document as they are not used to prosecute the summer flounder fishery.

However, estimates are available only for loggerhead sea turtles. Warden (2011a,b) estimated that from 2005-2008, the average annual loggerhead interactions in bottom trawl gear in the Mid-Atlantic²¹ was 292 (CV=0.13, 95% CI=221-369), with an additional 61 loggerheads (CV=0.17, 95% CI=41-83) interacting with trawls, but released through a Turtle Excluder Device (TED; see below for details on TEDs). The 292 average annual observable loggerhead interactions equates to approximately 44 adult equivalents (Warden 2011a,b). Most recently, Murray (2015b) estimated that from 2009-2013, the total average annual loggerhead interactions in bottom trawl gear in the Mid-Atlantic²² was 231 (CV=0.13, 95% CI=182-298); this equates to approximately 33 adult equivalents (Murray 2015b). Bycatch estimates provided in Warden (2011a) and Murray (2015b) are a decrease from the average annual loggerhead bycatch in bottom otter trawls during 1996-2004, which Murray (2008) estimated at 616 sea turtles (CV=0.23, 95% CI over the nine-year period: 367-890). This decrease is likely due to decreased fishing effort in high-interaction areas (Warden 2011a, b).

TEDs allow sea turtles to escape the trawl net, reducing injury and mortality resulting from capture in the net. In the Greater Atlantic Region, TEDs are required for summer flounder trawlers in the summer flounder fishery-sea turtle protection area. This area is bounded on the north by a line extending along 37°05'N (Cape Charles, VA) and on the south by a line extending out from the North Carolina-South Carolina border (Figure 21). Vessels north of Oregon Inlet, NC, are exempt from the TED requirement from January 15 through March 15 each year (50 CFR 223.206); vessels operating south of Oregon Inlet, NC are required to have TEDS year round.

²¹ Warden (2011a) defined the Mid-Atlantic as south of Cape Cod, Massachusetts, to approximately the North Carolina/South Carolina border.

²² Murray 2015b defined the Mid-Atlantic as the boundaries of the Mid-Atlantic Ecological Production; roughly waters west of 71°W to the North Carolina/South Carolina border)

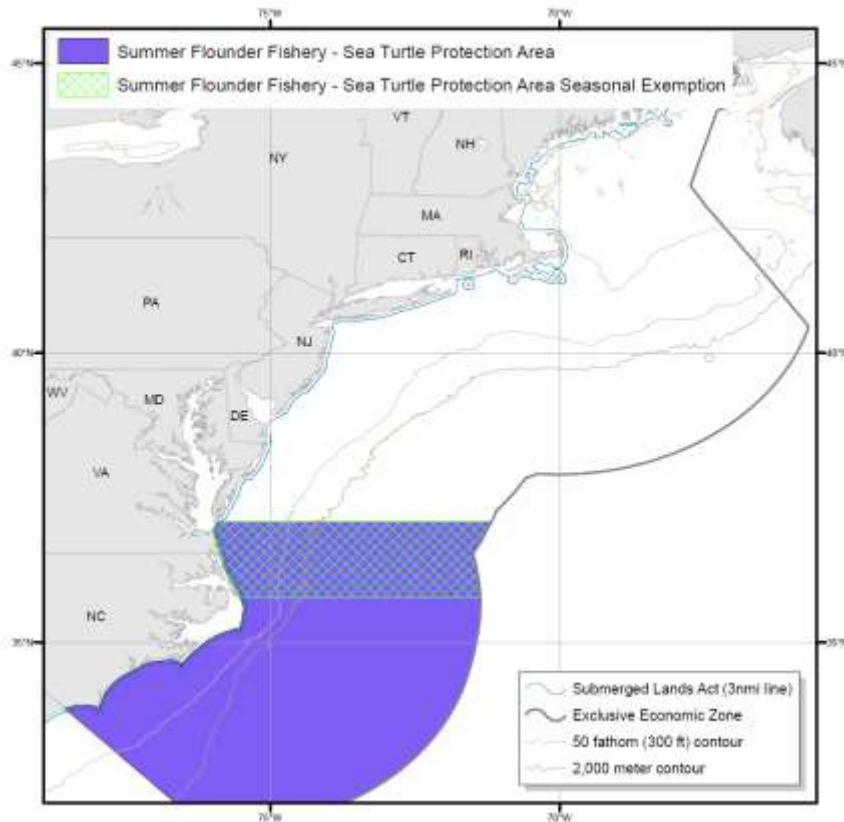


Figure 21: Summer Flounder Fishery Sea Turtle Protection Area.

Gillnet Gear

Gillnet gear of all types (drift sink, drift float, anchored sink, and drift large pelagic) pose an injury and mortality risk to all sea turtle species. Observers have documented green, Kemp’s ridley, leatherback, loggerhead, and unidentified sea turtles in these gillnet gears. This section, however, focuses on sink gillnets where possible, and does not include drift pelagic gillnets as these type of gillnet does not catch summer flounder.

Murray (2013) conducted an assessment of loggerhead and unidentified hard-shell turtle interactions in Mid-Atlantic gillnet gear during 2007-2011.²³ Based on Northeast Fisheries Observer Program data from 2007-2011, interactions between loggerhead and hard-shelled sea turtles (loggerheads plus unidentified hard-shelled) and commercial gillnet gear in the Mid-Atlantic averaged 95 hard-shelled turtles and 89 loggerheads (equivalent to 9 adults) annually

²³ Based on NEFOP observed hauls in Mid-Atlantic gillnet fisheries, Murray (2013) classified the observed gillnet hauls as follows: anchored to the bottom (65% of hauls), unanchored but fishing on the ocean bottom (32% of hauls), or drift/floating (3% of hauls).

(Murray 2013).²⁴ However, average estimated interactions in large mesh gear in warm, southern Mid-Atlantic waters have declined relative to those from 1996-2006 (Murray 2009), as did the total commercial effort (Murray 2013).

Beginning in the spring of 1995, and continuing in subsequent years, large numbers of sea turtles stranded along the coastline of North Carolina. These stranding events coincided with the monkfish and dogfish large mesh gillnet fisheries operating offshore, and in fact, some of the stranded turtles coming ashore had large mesh gillnet gear wrapped around their bodies. Because of the documented strandings and subsequent investigation, NMFS enacted the Mid-Atlantic large mesh gillnet rule in waters of the EEZ on December 3, 2002 (67 FR 71895); this rule was subsequently revised on April 26, 2006 (71 FR 24776). The Mid-Atlantic large mesh gillnet rule establishes seasonally adjusted gear restrictions by closing portions of the Mid-Atlantic EEZ to fishing with gillnets with a mesh size ≥ 7 -inch (17.8-cm) stretched mesh to protect migrating sea turtles (Figure 22).

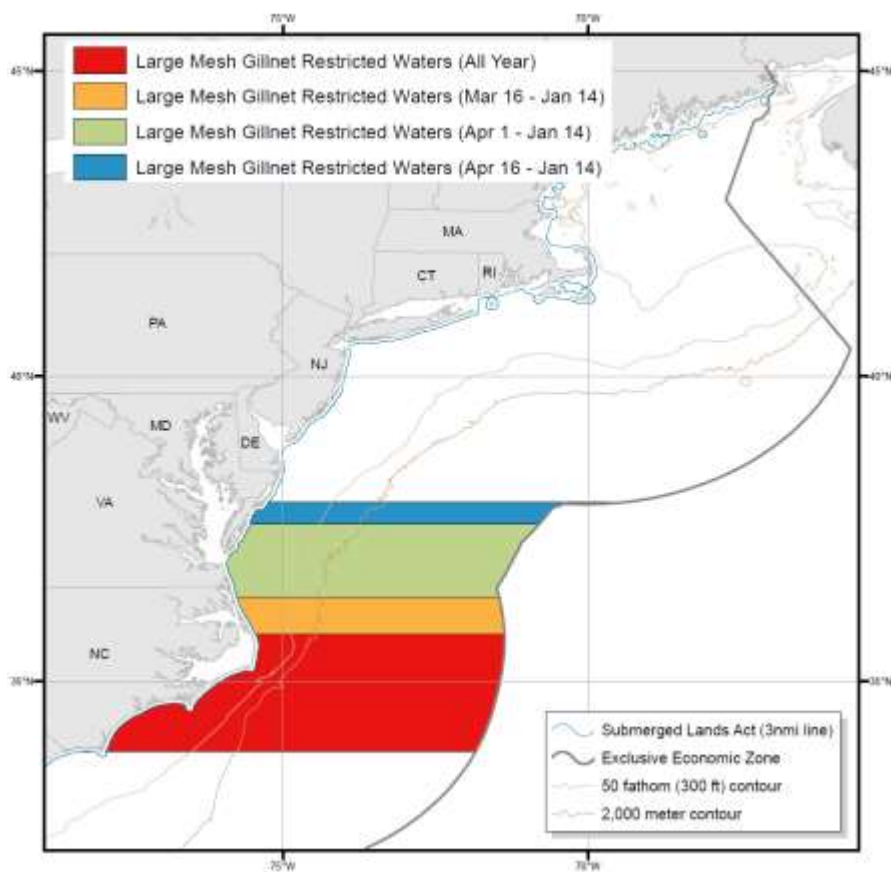


Figure 22: Mid-Atlantic Large Mesh Gillnet Restriction Area.

²⁴ At Sea Monitoring (ASM) data was also considered in Murray (2013); however, as the ASM program began May 1, 2010, trips (1,085 hauls), trips observed by at-sea monitors from May 2010 – December 2011 were pooled with the NEFOP data. Further, as most of the ASM trips occur in the Gulf of Maine, only a small portion (9%) of ASM data was used in the Murray (2013) analysis.

Summary of Observed Locations of Turtle Interactions with Bottom Tending Gear

Figure 23 shows the observed locations of sea turtle interactions with bottom tending gear (i.e., gillnet, dredge and bottom trawl gear) in the Greater Atlantic Region from 1989 to 2015. This figure also includes scallop dredge gear, although this gear type is not described further in this document as it is not used to target summer flounder and does not account for a substantive portion of summer flounder landings.

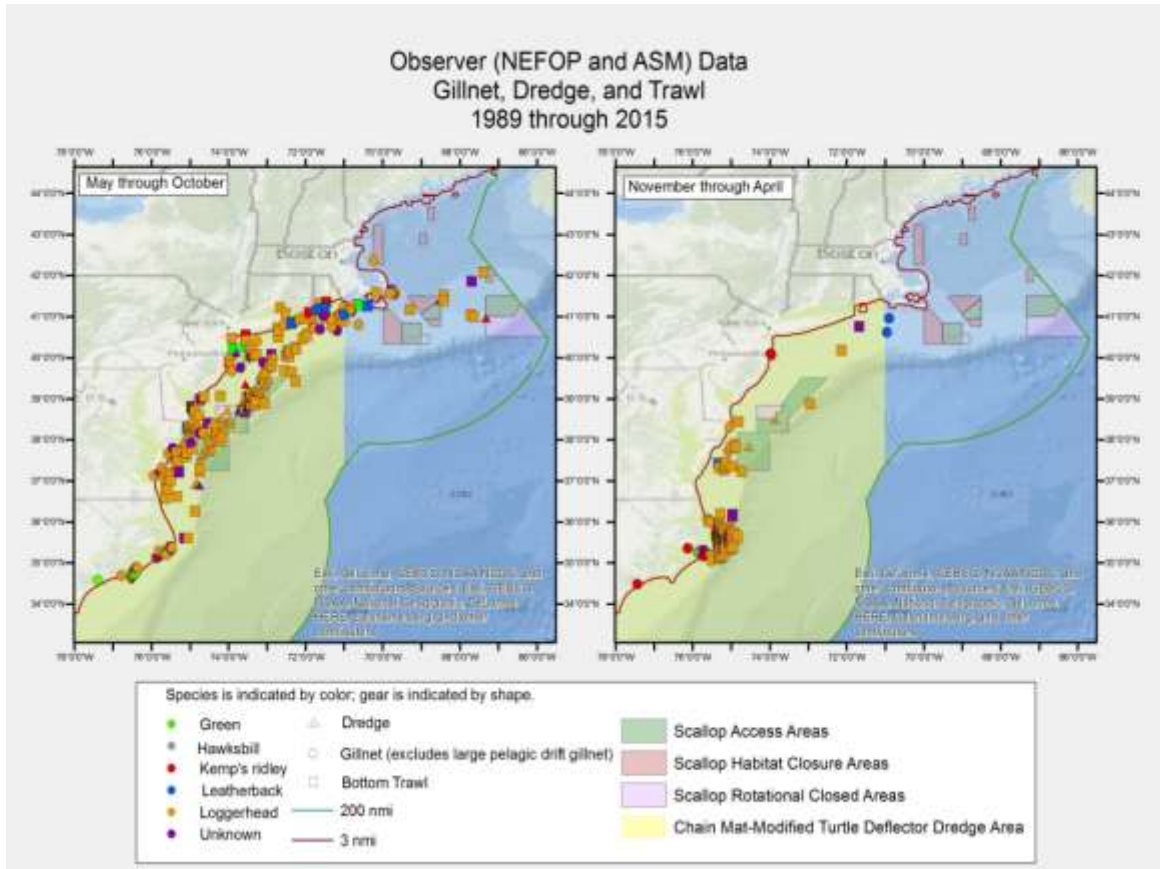


Figure 23: Observed Location of Turtle Interactions in Bottom Tending Gears in the Greater Atlantic Region 1989-2015.

Hook and Line

ESA-listed species of sea turtles are known to interact with hook and line gear and are more commonly reported in nearshore, southern waters (Sea Turtle Disentanglement Network; NMFS 2013; Palmer 2017). Hook and line gear can cause injury and mortality to sea turtles, and therefore, can pose a risk to these species. However, the extent to which these interactions impact sea turtle populations is still under investigation and, therefore, no conclusions can currently be made on the impact of hook and line gear on the continued survival of sea turtle populations.

Factors Affecting Sea Turtle Interactions

The risk of a gear interaction is affected by multiple factors, including where and when fishing effort is focused, the type of gear being used, environmental conditions, and sea turtle occurrence and distribution. Murray and Orphanides (2013) recently evaluated fishery-independent and

fishery-dependent data to identify environmental conditions associated with turtle presence and the subsequent risk of a bycatch encounter if fishing effort is present. They concluded that encounter rates were a function of latitude, sea surface temperature (SST), depth, and salinity, when looking at fishery-independent data. When the model was fit to fishery-dependent data (gillnet, bottom trawl, and scallop dredge), Murray and Orphanides (2013) found a decreasing trend in encounter rates as latitude increased; an increasing trend as SST increased; a bimodal relationship between encounter rates and salinity; and higher encounter rates in depths between 25 and 50 m. Similar findings were found in Warden (2011a), Murray (2013), and Murray (2015a, b).

6.4.3.2 *Marine Mammals*

Pursuant to the MMPA, NMFS publishes a List of Fisheries (LOF) annually, classifying U.S. commercial fisheries into one of three categories based on the relative frequency of incidental serious injuries and/or mortalities of marine mammals in each fishery.²⁵ The categorization in the LOF determines whether participants in that fishery are subject to certain provisions of the MMPA, such as registration under the Marine Mammal Authorization Program, observer coverage, and take reduction plan requirements. Individuals fishing in Category I or II fisheries must comply with requirements of any applicable take reduction plan.

Categorization of fisheries is based on the following two-tiered, stock-specific approach:

- **Tier 1** considers the cumulative fishery mortality and serious injury for a particular stock. If the total annual mortality and serious injury rates within a stock resulting from all fisheries are less than or equal to 10 percent of the stock’s Potential Biological Removal (PBR), all fisheries associated with this stock fall into Category III. If mortality and serious injury rates are greater than 10 percent of PBR, the following Tier 2 analysis occurs.
- **Tier 2** considers fishery-specific mortality and serious injury for a particular stock. Specifically, this analysis compares fishery-specific annual mortality and serious injury rates to a stock’s PBR to designate the fishery as a Category I, II, or III fishery (see Table 33).

Table 33: Descriptions of the Tier 2 fishery classification categories (50 CFR 229.2).

Category	Level of incidental mortality or serious injury of marine mammals	Annual mortality and serious injury of a stock in a given fishery is...
Category I	frequent	≥50% of the PBR level
Category II	occasional	between 1% and 50% of the PBR level
Category III	remote likelihood, or no known	≤1% of the PBR level

²⁵ The most recent LOF was issued February 7, 2018 (83 FR 5349).

Please note, in this document the following discussion on fishery interactions with marine mammals (large whales, small cetaceans and pinnipeds) are in reference to the Tier 2 classifications of fisheries in Table 33.

6.4.3.2.1 Large Whales

Atlantic large whales are at risk of becoming entangled in fishing gear because the whales feed, travel, and breed in many of the same ocean areas used for fishing. Below we provide the best available information on large whale interaction risks with gear types primarily used in the commercial summer flounder fishery (i.e., bottom trawl, gillnet, and hook and line (rod/reel)).

Bottom Trawl Gear

With the exception of one species, there have been no observed interactions with large whales and trawl gear. The one exception is minke whales, which have been observed seriously injured and killed in bottom trawl gear. In bottom trawl gear, to date, interactions have only been observed in the northeast bottom trawl fisheries. From the period of 2008-2012, the estimated annual mortality attributed to this fishery was 7.8 minke whales for 2008 and zero minke whales from 2009-2012; no serious injuries were reported during this time (Waring *et al.* 2015). Based on this information, from 2008-2012, the estimated annual average minke whale mortality and serious injury attributed to the northeast bottom trawl fishery was 1.6 (CV=0.69) whales (Waring *et al.* 2015). Lyssikatos (2015) estimated that from 2008-2013, mean annual serious injuries and mortalities from the northeast bottom trawl fishery were 1.40 (CV=0.58) minke whales. Serious injury and mortality records for minke whales in U.S. waters from 2010-2015 showed zero interactions with bottom trawl (Northeast or Mid-Atlantic) gear (Henry *et al.* 2016, 2017; Hayes *et al.* 2017).

Based on above information, trawl gear is likely to pose a low interaction risk to any large whale species. Should an interaction occur, serious injury or mortality to any large whale is possible; however, relative to other gear types discussed below (i.e., fixed gear), trawl gear represents a low source serious injury or mortality to any large whale (Henry *et al.* 2016, 2017; Hayes *et al.* 2017; Palmer 2017).

Hook and Line Gear

Large whales are known to interact with hook and line gear; however, in the most recent (2011-2015) mortality and serious injury determinations for baleen whales, the majority of cases identified with confirmed hook and line or monofilament entanglement did not result in the serious injury or mortality to the whale (89.3% observed/reported whales had a serious injury value of 0; 10.7% had a serious injury value of 0.75; none of the cases resulted in mortality; Henry *et al.* 2017).²⁶ In fact, 85.7% of the whales observed or reported with a hook/line or monofilament entanglement were resighted gear free and healthy; confirmation of the health of the other remaining whales remain unknown as no resightings had been made over the timeframe of the assessment (Henry *et al.* 2017). Based on this information, while large whale interactions with hook and line gear are possible, there is a low probability that an interaction will result in serious injury or mortality to any large whale species. Therefore, relative to other gear types, such as fixed gear, hook and line gear represents a low source serious injury or mortality to any large whale (Henry *et al.* 2017; Hayes *et al.* 2017; Palmer 2017).

²⁶ Any injury leading to a significant health decline (e.g., skin discoloration, lesions near the nares, fat loss, increased cyamid loads) is classified as a serious injury (SI) and will result in a SI value set at 1 (Henry *et al.* 2017).

Gillnet Gear

The greatest entanglement risk to large whales is posed by fixed fishing gear that includes lines (vertical or ground) that rise into the water column. This includes both gillnet and pot/trap gear, although pot/trap gear is not described further in this document as it is rarely used to target summer flounder and does not account for a substantial portion of the summer flounder landings. Any line can become entangled in the mouth (baleen), flippers, and/or tail of the whale when the animal is transiting or foraging through the water column (Johnson *et al.* 2005; NMFS 2014a,c; Kenney and Hartley 2001; Hartley *et al.* 2003; Whittingham *et al.* 2005a,b; Hayes *et al.* 2017). For instance, in a study of right and humpback whale entanglements, Johnson *et al.* (2005) attributed: (1) 89% of entanglement cases, where gear could be identified, to fixed gear consisting of pot and gillnets and (2) entanglement of one or more body parts of large whales (e.g., mouth and/or tail regions) to four different types of line associated with fixed gear (the buoy line, groundline, floatline, and surface system lines).²⁷ Although available data (e.g., Johnson *et al.* (2005), Hayes *et al.* (2017); Henry *et al.* (2017)) provides insight into large whale entanglement risks with fixed fishing gear, determining which part of fixed gear creates the most entanglement risk for large whales is difficult (Johnson *et al.* 2005). The difficulties arise from uncertainties surrounding the nature of the entanglement event, as well as unknown biases associated with reporting effort and the lack of information about the types and amounts of gear being used. As a result, any type or part of fixed gear is considered to create an entanglement risk to large whales and should be considered potentially dangerous to large whale species (Johnson *et al.* 2005).

The effects of entanglement to large whales range from no injury to death (NMFS 2014a,c; Johnson *et al.* 2005; Angliss and Demaster 1998; Moore and Van der Hoop 2012). The risk of injury or death in the event of an entanglement may depend on the characteristics of the whale involved (species, size, age, health, etc.), the nature of the gear (e.g., whether the gear incorporates weak links designed to help a whale free itself), human intervention (e.g., the feasibility or success of disentanglement efforts), or other variables (NMFS 2014c). Although the interrelationships among these factors are not fully understood, and the data needed to provide a more complete characterization of risk are not available, available data indicates that entanglement in fishing gear is a significant source of serious injury or mortality for Atlantic large whales (Table 34; Henry *et al.* 2017; Hayes *et al.* 2017).

Table 34 summarizes confirmed human-caused serious injury and mortality to humpback, fin, sei, minke, and North Atlantic right whales along the Gulf of Mexico Coast, U.S. East Coast, and Atlantic Canadian Provinces from 2011 to 2015 (Henry *et al.* 2017). The data provided in Table 34 is specific to confirmed serious injury or mortality to whales from entanglement in fishing gear. As many entanglement events go unobserved, and because the gear type, fishery, and/or country of origin for reported entanglements are often not traceable, the information presented in Table 34 likely underestimates the rate of large whale serious injury and mortality due to entanglement. Studies looking at scar rates for right whales and humpbacks suggest that entanglements may be

²⁷ Buoy line connects the gear at the bottom to the surface system. Groundline in trap/pot gear connects traps/pots to each other to form trawls; in gillnet gear, groundline connects a gillnet, or gillnet bridle to an anchor or buoy line. Floatline is the portion of gillnet gear from which the mesh portion of the net is hung. The surface system includes buoys and high-flyers, as well as the lines that connect these components to the buoy line.

occurring more frequently than the observed incidences indicate (NMFS 2014c; Robbins 2009; Knowlton *et al.* 2012).

Table 34: Summary of confirmed serious injury or mortality to fin, minke, humpback, sei, and North Atlantic right whales from 2011-2015 due to fisheries entanglements.¹

Species	Total Confirmed Entanglement: Serious Injury ²	Total Confirmed Entanglement: Non-Serious Injury	Total Confirmed Entanglement: Mortality	Entanglement Events: Total Average Annual Injury and Mortality Rate (US waters/Canadian waters/unassigned waters)
North Atlantic Right Whale	19	35	5	4.55 (0.4/0/4.15)
Humpback Whale	32	61	5	6.45 (1.5/0.3/4.65)
Fin Whale	6	2	4	1.85 (0.2/0.8/0.85)
Sei Whale	0	0	0	0
Minke Whale	20	12	22	7.75 (1.9/3.25/2.6)

Notes:
¹Information presented in this table is based on confirmed human-caused injury and mortality events along the Gulf of Mexico Coast, US East Coast, and Atlantic Canadian Provinces; it is not specific to US waters only.
² NMFS defines a serious injury as an injury that is more likely than not to result in mortality (for additional details see: http://www.nmfs.noaa.gov/pr/pdfs/serious_injury_procedure.pdf)
Source: Henry *et al.* 2017

As noted in section 6.4.3.2, pursuant to the MMPA, NMFS publishes a List of Fisheries annually, classifying U.S. commercial fisheries into one of three categories based on the relative frequency of incidental serious injurious and mortalities of marine mammals in each fishery. Large whales, in particular, humpback, fin, minke, and North Atlantic right whales, are known to interact with Category I and II fisheries in the (Northwest) Atlantic Ocean. As fin and North Atlantic right whales are listed as endangered under the ESA, these species are considered strategic stocks under the MMPA (see section 6.4.2). Section 118(f)(1) of the MMPA requires the preparation and implementation of a Take Reduction Plan (TRP) for any strategic marine mammal stock that interacts with Category I or II fisheries. In response to its obligations under the MMPA, in 1996 NMFS established the Atlantic Large Whale Take Reduction Team (ALWTRT) to develop a plan (Atlantic Large Whale Take Reduction Plan (ALWTRP)) to reduce serious injury and mortality of large whales, specifically, humpback, fin, and North Atlantic right whales, due to incidental entanglement in U.S. commercial fishing gear.²⁸ The ALWTRP was implemented in 1997, and has been modified several times since as NMFS and the ALWTRT learn more about why whales become entangled and how fishing practices might be modified to reduce the risk of entanglement. Recent adjustments include the Sinking Groundline Rule and Vertical Line Rules (72 FR 57104, October 5, 2007; 79 FR 36586, June 27, 2014; 79 FR 73848, December 12, 2014; 80 FR 14345, March 19, 2015; 80 FR 30367, May 28, 2015).²⁹

²⁸ The measures identified in the ALWTRP are also beneficial to the survival of the minke whale, which are also incidentally taken in commercial fishing gear.

²⁹ The most recent rule (Vertical Line Rule) focused on trap/pot vertical line reduction as the ALWTRT determined that gillnets represent less than 1% of the total vertical lines on the East Coast and that the impacts from this gear on

The ALWTRP consists of regulatory (e.g., universal gear requirements, modifications, and requirements; area-and season- specific gear modification requirements and restrictions; time/area closures) and non-regulatory measures (e.g., gear research and development, disentanglement, education and outreach) that, in combination, seek to assist in the recovery of North Atlantic right, humpback, and fin whales by addressing and mitigating the risk of entanglement in gear employed by commercial fisheries, specifically trap/pot and gillnet fisheries (<http://www.greateratlantic.fisheries.noaa.gov/Protected/whaletrp/>; 73 FR 51228; 79 FR 36586; 79 FR 73848; 80 FR 14345; 80 FR 30367). The plan recognizes trap/pot and gillnet Management Areas in Northeast, Mid-Atlantic, and Southeast regions of the U.S, and identifies gear modification requirements and restrictions for Category I and II gillnet and trap/pot fisheries in these regions; these Category I and II fisheries must comply with all regulations of the Plan.³⁰ For further details on the ALWTRP please see: <http://www.greateratlantic.fisheries.noaa.gov/Protected/whaletrp/>

6.4.3.2.2 Small Cetaceans and Pinnipeds

Small cetaceans and pinnipeds are found throughout the waters of the Northwest Atlantic (see Section 6.4.2). As they feed, travel, and breed in many of the same ocean areas used for fishing, they are at risk of becoming entangled or caught in various types of fishing gear. Interactions can result in serious injury or mortality to the animal. Below we provide the best available information on small cetaceans and pinniped interaction risks with gear types primarily used in the commercial summer flounder fishery (i.e., trawl (bottom or mid-water), gillnet, and hook and line (rod/reel)).

Hook and Line

Over the past several years, observer coverage has been limited for fisheries prosecuted with hook and line gear. In the absence of extensive observer data for these fisheries, stranding data provides the next best source of information on species interactions with hook and line gear. It is important to note, however, stranding data underestimates the extent of human-related mortality and serious injury because not all of the marine mammals that die or are seriously injured in human interactions are discovered, reported, or show signs of entanglement. Additionally, if gear is present, it is often difficult to definitively attribute the animal's death to the gear interaction, or if pieces of gear are absent, attribute the death or serious injury to a specific fishery or fishing gear type. As a result, the conclusions below should be taken with these considerations in mind, and with an understanding that interactions may occur more frequently than what we are able to detect at this time.

At the beginning of section 6.4, Table 25 provides the list of small cetacean and pinniped species that may be affected by the summer flounder fishery. Of these species, only several bottlenose dolphin stocks have been identified as species at risk of becoming seriously injured or killed by hook and line gear. For each dolphin stock identified in Table 25, stranding data provides the best source of information on species interaction history with hook and line gear types. Specifically,

large whales is minimal (see Appendix 3A, NMFS 2014c); however, even with the new rule, gear will still be subject to existing restrictions under the ALWTRP for gillnet gear.

³⁰ The fisheries currently regulated under the ALWTRP include: Northeast/Mid-Atlantic American lobster trap/pot; Atlantic blue crab trap/pot; Atlantic mixed species trap/pot; Northeast sink gillnet; Northeast anchored float gillnet; Northeast drift gillnet; Mid-Atlantic gillnet; Southeastern U.S. Atlantic shark gillnet; and Southeast Atlantic gillnet (NMFS 2014c).

based on stranding data from 2007-2013, estimated mean annual mortality for each stock due to interactions with hook and line gear was approximately one annual mortality for each stock (Waring *et al.* 2014a; Waring *et al.* 2016; Palmer 2017).³¹ Based on this and the best available information, hook and line gear is not expected to pose an interaction risk to pinniped species, and interaction risks to small cetaceans (specifically bottlenose dolphins) are expected to be low. Should an interaction with a small cetacean occur, serious injury or mortality to the animal is possible; however, relative to other gear types discussed below (i.e., trawl or gillnet gear), hook and line or trap/pot gear represents a low source serious injury or mortality to any small cetacean (Palmer 2017).

Gillnet and Bottom Trawl Gear

Small cetaceans and pinnipeds are vulnerable to interactions with sink gillnet and bottom trawl gear. Species that have been observed incidentally injured and/or killed by MMPA LOF Category I (frequent interactions) gillnet and/or Category II (occasional interactions) bottom trawl fisheries that operate in the affected environment of summer flounder fishery are provided in Table 30 (Hayes *et al.* 2017; 83 FR 5349 (February 7, 2018)). Of the species provided in Table 35, gray seals, followed by harbor seals, harbor porpoises, short beaked common dolphins, harp seals, and Atlantic white sided dolphins are the most frequently bycaught small cetacean and pinnipeds in sink gillnet gear in the Greater Atlantic Region (GAR; Hatch and Orphanides 2014, 2015, 2016). In terms of bottom trawl gear, short-beaked common dolphins and Atlantic white-sided dolphins are the most frequently observed bycaught marine mammal species in the GAR, followed by gray seals, long-finned pilot whales, and risso's dolphins, bottlenose dolphin (offshore), harbor porpoise, and harp seals (Lyssikatos 2015).

³¹ Stranding data provided in Waring *et al.* 2015 and Hayes *et al.* 2017 were not considered in estimating mean annual mortality as not all bottlenose dolphin stocks are addressed in this stock assessment report. As all bottlenose dolphin stocks are considered in Waring *et al.* (2014a) and Waring *et al.* (2016), these stock assessment reports were used to estimate mean annual mortality. Estimates of mean annual mortality were calculated based on the total number of animals that stranded between 2007-2013, and that were determined to have incurred serious injuries or mortality as result of interacting with hook and line gear. Any animals released alive with no serious injuries were not included in the estimate. Also, if maximum or minimum number of animals stranded were provided, to be conservative, we considered the maximum estimated number in calculating our mean annual estimate of mortality.

Table 35: Small cetacean and pinniped species observed seriously injured and/or killed by Category I gillnet or Category II bottom trawl fisheries in the affected environment of the summer flounder fishery.

Fishery	Category	Species Observed or reported Injured/Killed
Northeast Sink Gillnet	I	Bottlenose dolphin (offshore)
		Harbor porpoise
		Atlantic white sided dolphin
		Short-beaked common dolphin
		Risso’s dolphin
		Long-finned pilot whales
		Harbor seal
		Hooded seal
		Gray seal
		Harp seal
Mid-Atlantic Gillnet¹	I	Bottlenose dolphin (Northern Migratory coastal)
		Bottlenose dolphin (Southern Migratory coastal)
		Bottlenose dolphin (offshore)
		Harbor porpoise
		Short-beaked common dolphin
		Risso’s dolphin
		Harbor seal
		Harp seal
		Gray seal
Northeast Bottom Trawl	II	Harp seal
		Harbor seal
		Gray seal
		Long-finned pilot whales
		Short-beaked common dolphin
		White-sided dolphin
		Harbor porpoise
		Bottlenose dolphin (offshore)
		Risso’s dolphin
Mid-Atlantic Bottom Trawl	II	White-sided dolphin
		Short-beaked common dolphin
		Risso’s dolphin
		Bottlenose dolphin (offshore)
		Gray seal
		Harbor seal

Notes:
^{1,2} MMPA 2017 LOF (82 FR 3655, January 12, 2017) describes the gear used in the Mid-Atlantic Gillnet fishery (Category I) or Southeastern U.S. Atlantic Shark Gillnet fishery (Category II) as sink and drift gillnets.
Sources: Waring *et al.* 2016; MMPA LOF 82 FR 3655 (January 12, 2017).

Although there are multiple Category I and II fisheries that have the potential to result in the serious injury and mortality of small cetaceans and pinnipeds in the Greater Atlantic Region, the risk of an interaction with a specific fishery is affected by multiple factors, including where and when

fishing effort is focused, the type of gear being used, and how effort overlaps in time and space with specific species in the affected area. For instance Figure 24 and Figure 25 show observed marine mammal takes (large whales excluded) in gillnet and trawl gear in waters of the Gulf of Maine, Georges Bank, and Southern New England. As shown in these figures, over the last five years there appear to be particular areas in the Gulf of Maine, Georges Bank, and Southern New England where fishing effort is overlapping in time and space with small cetacean or pinniped occurrence. Although uncertainties remain, due to shifting fishing effort patterns and data on true density (or even presence/absence) for some species, the available observer data, as shown in Figure 24 and Figure 25, does provide some insight into areas in the ocean where the likelihood of species interactions is high. These figures provide a baseline to consider potential impacts of future shifts or changes in fishing effort on small cetaceans and pinnipeds. For additional maps showing observed small cetacean and pinniped interactions with gear types used to prosecute fisheries in New England or the Mid-Atlantic see Appendix III in marine mammal stock assessment reports provided at: <http://www.nmfs.noaa.gov/pr/sars/region.htm>.

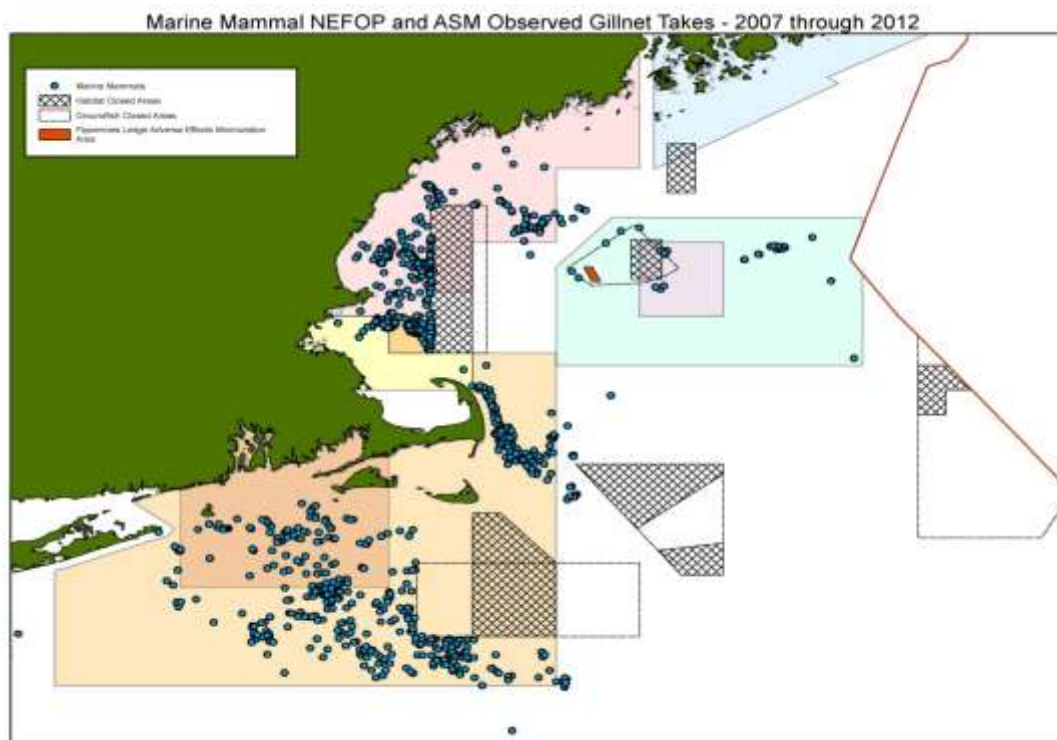


Figure 24: Map of Marine Mammal Bycatch in Gillnet Gear in the New England Region (Excluding Large Whales) Observed by Northeast Fisheries Observer Program (NEFOP) and At Sea Monitoring (ASM) Program Between 2007 and 2012.

Map legend: blue dot=observed marine mammal takes; cross hatched areas= Habitat Closure Areas; white box with hatched outline=Groundfish Closed Areas; orange box=Fippennies Ledge Area; pastel shaded boxes=harbor porpoise take reduction plan management areas. **Notes:** Small cetacean and pinnipeds have been observed taken primarily in: (1) the waters west of the Gulf of Maine Habitat/Groundfish closed area: Harbor seals, harp seals, and harbor porpoise; (2) off of Cape Cod, MA: Gray seals, harbor seals, and harbor porpoise; (3) west of the Nantucket Lightship Closed Area: Harbor porpoise, short-beaked common dolphin, gray seals, harp seals, and harbor seals; and (4) waters off southern MA and RI: Gray seals and harbor seals, and some harbor porpoise and short-beaked common dolphin.

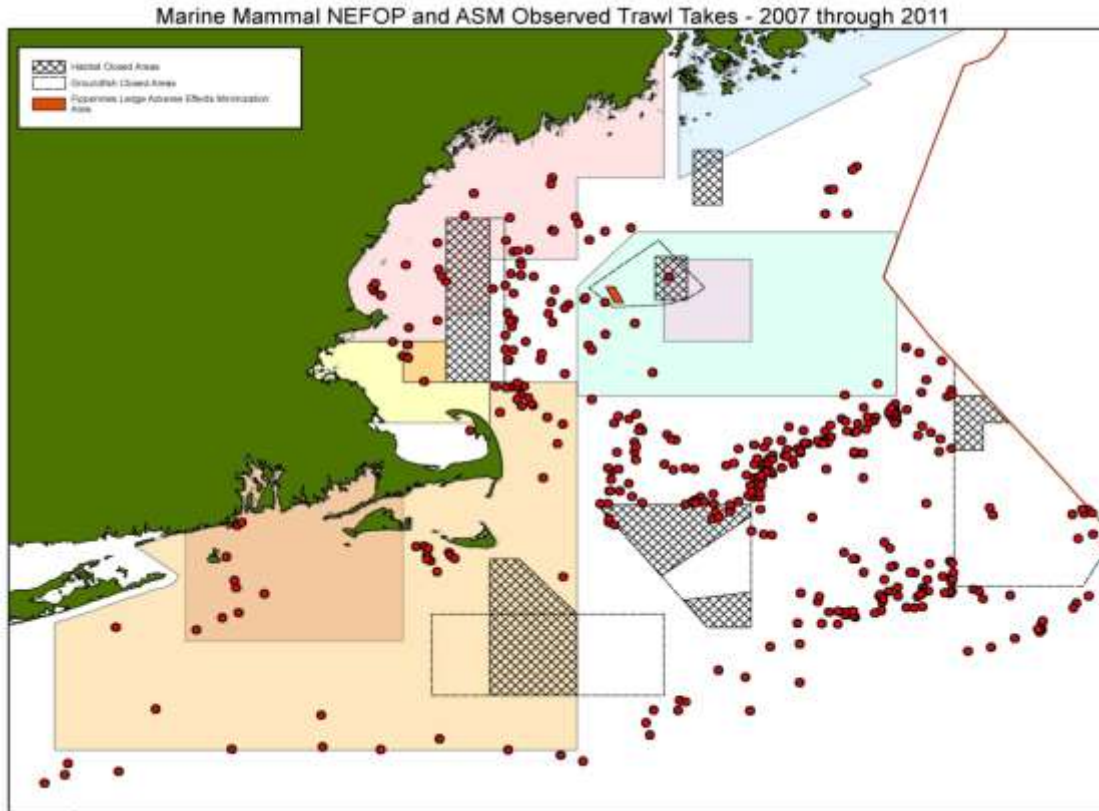


Figure 25: Map of Marine Mammal Bycatch in Trawl Gear in the New England Region (Excluding Large Whales) Observed by the Northeast Fisheries Observer Program (NEFOP) and At-Sea Monitoring (ASM) Program Between 2007 and 2011.

Map legend: red dot=observed marine mammal takes; cross hatched areas= Habitat Closure Areas; white box with hatched outline=Groundfish Closed Areas; orange box=Fippennies Ledge Area; pastel shaded boxes=Harbor Porpoise Take Reduction Plan Management Areas. *Notes:* Small cetacean and pinnipeds observed taken primarily in: (1) the waters between and around CA I and CA II (Groundfish closed areas): Short-beaked common dolphin, pilot whales, white-sided dolphins, gray seals, and some Risso’s dolphins and harbor porpoise; and (2) eastern side of the Gulf of Maine Habitat/Groundfish closed area: White-sided dolphins, and some pilot whales and harbor seals.

As noted above, numerous species of small cetaceans and pinnipeds interact with Category I and II fisheries in the Greater Atlantic Region; however, several species in Small cetaceans and pinnipeds are vulnerable to interactions with sink gillnet and bottom trawl gear. Species that have been observed incidentally injured and/or killed by MMPA LOF Category I (frequent interactions) gillnet and/or Category II (occasional interactions) bottom trawl fisheries that operate in the affected environment of summer flounder fishery are provided in Table 30 (Hayes et al. 2017; 83 FR 5349 (February 7, 2018)). Of the species provided in Table 35, gray seals, followed by harbor seals, harbor porpoises, short beaked common dolphins, harps seals, and Atlantic white sided dolphins are the most frequently bycaught small cetacean and pinnipeds in sink gillnet gear in the Greater Atlantic Region (GAR; Hatch and Orphanides 2014, 2015, 2016). In terms of bottom trawl gear, short-beaked common dolphins and Atlantic white-sided dolphins are the most frequently observed bycaught marine mammal species in the GAR, followed by gray seals, long-finned pilot whales, and risso’s dolphins, bottlenose dolphin (offshore), harbor porpoise, and harp seals (Lyssikatos 2015).

Table 35 have experienced such great losses to their populations as a result of interactions with Category I and II fisheries that they are now considered strategic stocks under the MMPA. These species include several stocks of bottlenose dolphins, and until recently, harbor porpoise.³² Section 118(f)(1) of the MMPA requires the preparation and implementation of a Take Reduction Plan for any strategic marine mammal stock that interacts with Category I or II fisheries. As a result, the Harbor Porpoise Take Reduction Plan (HPTRP) and the Bottlenose Dolphin Take Reduction Plan (BDTRP) were developed and implemented for these species.³³ The following provides a brief overview and summary for each Plan; however, additional information on each Plan can be found at: <http://www.greateratlantic.fisheries.noaa.gov/protected/porptrp/> or <http://www.nmfs.noaa.gov/pr/interactions/trt/bdtrp.htm>

Harbor Porpoise Take Reduction Plan

To address the high levels of incidental take of harbor porpoise in the groundfish sink gillnet fishery, a Take Reduction Team was formed in 1996. A rule (63 FR 66464) to implement the Harbor Porpoise Take Reduction Plan to reduce harbor porpoise bycatch in U.S. Atlantic gillnets was published on December 2, 1998. The Plan became effective on January 1, 1999 and was amended on February 19, 2010 (75 FR 7383), and October 4, 2013 (78 FR 61821). Since gillnet operations differ between the New England and Mid-Atlantic regions, the following sets of measures were devised for each region:

- **New England Region:** The New England component of the Plan pertains to all fishing with sink gillnets and other gillnets capable of catching multispecies in New England waters from Maine through Rhode Island. This portion of the Plan includes time and area closures, as well as closures to multispecies gillnet fishing unless pingers are used in the manner prescribed in the Plan regulations. For additional details see 50 CFR 229.33 and the outreach guide at: http://www.greateratlantic.fisheries.noaa.gov/prot_res/porptrp/doc/HPTRPNewEnglandGuide.pdf.
- **Mid-Atlantic Region:** The Mid-Atlantic portion of the Plan pertains to the Mid-Atlantic shoreline from the southern shoreline of Long Island, New York to the North Carolina/South Carolina border. It includes four management areas (Waters off New Jersey, Mudhole North (located in Waters off New Jersey Management Area), Mudhole South (located in Waters off New Jersey Management Area), and Southern Mid-Atlantic), each with time and area closures to gillnet fishing unless the gear meets certain specifications. Additionally, during regulated periods, gillnet fishing in each management area of the Mid-Atlantic is regulated differently for small mesh (> 5 inches to < 7 inches) and large (7-18 inches) mesh gear. The Plan also includes some time and area closures in which gillnet fishing is prohibited regardless of the gear specifications. For additional

³² In the most recent U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessment (Hayes et al. 2017); harbor porpoise are no longer designated as a strategic stock because average annual human-related mortality and serious injury no longer exceeds PBR. However, as the zero mortality rate goal has not been attained, the HPTRP is still in effect.

³³ Although the most recent U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessment (Waring et al. 2016) no longer designates harbor porpoise as a strategic stock, HPTRP regulations are still in place per the mandates provided in Section 118(f)(1).

details see 50 CFR 229.34 and the outreach guide at:
http://www.greateratlantic.fisheries.noaa.gov/prot_res/porptrp/doc/HPTRPMidAtlanticGuide_Feb%202010.pdf

Bottlenose Take Reduction Plan

In April 2006, NMFS published a final rule to implement the BDTRP for the western North Atlantic coastal stock of bottlenose dolphin (April 26, 2006, 71 FR 24776) to reduce the incidental mortality and serious injury in the Mid-Atlantic gillnet fishery and eight other coastal fisheries operating within the dolphin's distributional range.³⁴ The measures contained in the Plan include gillnet effort reduction, gear proximity requirements, gear or gear deployment modifications, and outreach and educational measures to reduce dolphin bycatch below the marine mammals stock's PBR. On July 31, 2012 (77 FR 45268), the BDTRP was amended to permanently continue nighttime fishing restrictions of medium mesh gillnets operating in North Carolina coastal state waters. The Plan was most recently amended on February 9, 2015 (80 FR 6925) to reduce the incidental serious injury and mortality of strategic stocks of bottlenose dolphins in Virginia pound net fishing gear, and to provide consistent state and Federal regulations for Virginia pound net fishing gear. For additional details on the Plan please visit: <http://www.nmfs.noaa.gov/pr/interactions/trt/bdtrp.htm>

Atlantic Trawl Gear Take Reduction Strategy

In addition to the Harbor Porpoise and Bottlenose Dolphin take reduction plans, in 2006, the Atlantic Trawl Gear Take Reduction Team was convened to address the incidental mortality and serious injury of long-finned pilot whales (*Globicephala melas*), short-finned pilot whales (*Globicephala macrorhynchus*), common dolphins (*Delphinus delphis*), and white-sided dolphins (*Lagenorhynchus acutus*) incidental to bottom and mid-water trawl fisheries operating in both the Northeast and Mid-Atlantic regions. Because none of the marine mammal stocks of concern to the Team are classified as a "strategic stock," nor do they currently interact with a Category I fishery, a take reduction plan was not necessary.³⁵

In lieu of a take reduction plan, the Team agreed to develop an Atlantic Trawl Gear Take Reduction Strategy. The Strategy identifies informational and research tasks, as well as education and outreach needs the Team believes are necessary, to decrease mortalities and serious injuries of marine mammals to insignificant levels approaching zero. The Strategy also identifies several voluntary measures that can be adopted by certain trawl fishing sectors to potentially reduce the incidental capture of marine mammals. For additional details on the Strategy, please visit: <http://www.greateratlantic.fisheries.noaa.gov/Protected/mmp/atgtrp/>

³⁴ The final rule issued on April 26, 2006, for the BDTRP also revised the large mesh size restriction under the Mid-Atlantic large mesh gillnet rule for conservation of endangered and threatened sea turtles to provide consistency among Federal and state management measures.

³⁵ A strategic stock is defined under the MMPA as a marine mammal stock: for which the level of direct human-caused mortality exceeds the potential biological removal level; which, based on the best available scientific information, is declining and is likely to be listed as a threatened species under the ESA within the foreseeable future; or which is listed as a threatened or endangered species under the ESA, or is designated as depleted under the MMPA.

6.4.3.3 Atlantic Sturgeon

Atlantic sturgeon feed, migrate, and rest in many of the same ocean areas used for fishing, and therefore may interact with fishing gear (see section 6.4.2.5). Below we provide the best available information on Atlantic sturgeon interaction risks with gear types primarily used in the summer flounder fishery (i.e., bottom trawls, gillnet, and hook/line).

Gillnets and Bottom Trawls

Atlantic sturgeon interactions (i.e., bycatch) with sink gillnet and bottom trawl gear have been observed since 1989; these interactions have the potential to result in the injury or mortality of Atlantic sturgeon (NMFS NEFSC FSB 2015, 2016). Three documents, covering three time periods, that use data collected by the Northeast Fisheries Observer Program to describe bycatch of Atlantic sturgeon in gillnet and bottom trawl gear: Stein et al. (2004b) for 1989-2000; ASMFC (2007) for 2001-2006; and Miller and Shepard (2011) for 2006-2010; none of these documents provide estimates of Atlantic sturgeon bycatch by Distinct Population Segment.³⁶ Miller and Shepard (2011), the most of the three documents, analyzed fishery observer data and VTR data in order to estimate the average annual number of Atlantic sturgeon interactions in gillnet and otter trawl in the Northeast Atlantic that occurred from 2006 to 2010. This timeframe included the most recent, complete data and as a result, Miller and Shepard (2011) is considered to represent the most accurate predictor of annual Atlantic sturgeon interactions in the Northeast gillnet and bottom trawl fisheries (NMFS 2013).

Based on the findings of Miller and Shepard (2011), NMFS (2013) estimated that the annual bycatch of Atlantic sturgeon in gillnets to be 1,239 sturgeon and 1,342 sturgeon in bottom otter trawl gear. Miller and Shepard (2011) observed Atlantic sturgeon interactions in trawl gear with small (< 5.5 inches) and large (\geq 5.5 inches) mesh sizes, as well as gillnet gear with small (< 5.5 inches), large (5.5 to 8 inches), and extra-large mesh (>8 inches) sizes. Although Atlantic sturgeon were observed to interact with trawl and gillnet gear with various mesh sizes, Miller and Shepard (2011) concluded that, based on NEFOP observed sturgeon mortalities, gillnet gear, in general, posed a greater risk of mortality to Atlantic sturgeon than did trawl gear. Estimated mortality rates in gillnet gear were 20.0%, while those in otter trawl gear were 5.0% (Miller and Shepard 2011; NMFS 2013). Similar conclusions were reached in Stein *et al.* (2004b) and ASMFC (2007) reports; after review of observer data from 1989-2000 and 2001-2006, both studies concluded that observed mortality is much higher in gillnet gear than in trawl gear. However, an important consideration to these findings is that observed mortality is considered a minimum of what actually occurs and therefore, the conclusions reached by Stein *et al.* (2004b), ASMFC (2007), and Miller and Shepard (2011) are not reflective of the total mortality associated with either gear type. To date, total Atlantic sturgeon mortality associated with gillnet or trawl gear remains uncertain.

Hook and Line Gear

ESA-listed species of Atlantic sturgeon are known to interact with hook and line gear, particularly in nearshore waters from the Gulf Maine to Southern New England (ASMFC 2017; NMFS 2013). Injury and mortality to Atlantic sturgeon can be incurred by hook and line gear interactions, and therefore, can pose a risk to these species. However, the extent to which these interactions are impacting Atlantic sturgeon DPSs is still under investigation and therefore, no conclusions can

³⁶ Atlantic sturgeon bycatch analysis conducted by Stein et al. (2004b) was limited to otter trawl, sink gillnet, and drift gillnet gear. ASMFC (2007) and Miller and Shepard (2011) estimates of Atlantic sturgeon bycatch are based on NEFOP observed sink gillnet and otter trawl trips.

currently be made on the impact of hook and line gear on the continued survival of Atlantic sturgeon DPSs (ASMFC 2017; NMFS 2013; NMFS 2011b).

6.4.3.4 Atlantic Salmon

As described in Section 6.4.2.6, the marine range of the Gulf of Maine Distinct Population Segment extends from the Gulf of Maine (primarily northern portion) to the coast of Greenland (NMFS and USFWS 2005, 2016; Fay *et al.* 2006). Although the distribution of Atlantic salmon in the marine environment likely overlaps with commercial fisheries, there have been a low number of observed interactions with fisheries and various gear types. Below we provide the best available information on Atlantic salmon interaction risks with gear types primarily used in the summer flounder fishery (i.e., bottom trawls, gillnet, and hook/line).

Gillnet and Bottom Trawl Gear

Atlantic salmon interactions (i.e., bycatch) with gillnet and bottom trawl have been observed since 1989; in many instances, these interactions have resulted in the injury and mortality of Atlantic salmon (NMFS NEFSC FSB 2015, 2016, 2017). NMFS Northeast Fisheries Science Center's (NEFSC) Northeast Fisheries Observer and At-Sea Monitoring Programs documented a total of 15 individual salmon incidentally caught on more than 60,000 observed commercial fishing trips from 1989 through August 2013 (NMFS 2013; Kocik *et al.* 2014). Atlantic salmon were observed caught in gillnet (11/15)³⁷ and bottom otter trawl gear (4/15), with 10 of the incidentally caught salmon listed as “discarded” and five reported as mortalities (Kocik (NEFSC), pers. comm (February 11, 2013) in NMFS 2013). Since 2013, no additional Atlantic salmon have been observed in gillnet or bottom trawl (NMFS NEFSC FSB 2015, 2016, 2017). Based on the above information, interactions with Atlantic salmon are likely rare (Kocik *et al.* 2014).

Hook and Line Gear

To date, there have been no observed/documentated interactions with Atlantic salmon from hook and line gear (NMFS NEFSC FSB 2015, 2016, 2017). Based on this information, this gear type is not expected to pose an interaction risk to any Atlantic salmon and therefore, are not expected to be source of injury or mortality to this species (Palmer 2017).

6.5 HUMAN ENVIRONMENT

Summer flounder supports the most important commercial and recreational flatfish fisheries of the U.S. Atlantic coast. The fishery ranges from Massachusetts to North Carolina. The sections below describe the commercial and recreational summer flounder fisheries and their management, with an emphasis on the commercial fishery as commercial management is the subject of the proposed actions in this amendment.

Commercial gear types used in the summer flounder fishery were previously described in section 6.3.3. Section 6.5.1 characterizes each fishery in terms of catch and landings patterns and trends over time. Section 6.5.2 describes the economic characteristics of the summer flounder fishery that are relevant to this action, including ex-vessel values, participation and use of commercial moratorium permits, and the major communities and ports impacted by the commercial summer flounder fishery.

³⁷ Of the 11 observed Atlantic salmon in gillnet gear, 10/11 Atlantic salmon were observed in sink gillnet gear; only one Atlantic salmon was observed in drift gillnet gear.

6.5.1 Description of the Fisheries

6.5.1.1 Total Catch Composition

Commercial landings have accounted for 49% of the total catch since 1993, with recreational landings accounting for 34%, commercial dead discards about 10%, and recreational dead discards about 7%. Over the more recent time period of 2012-2016, the comparable percentages are 53% commercial landings, 31% recreational landings, 8% commercial dead discards, and 8% recreational dead discards (Figure 26).

Commercial discard losses in the fish trawl and scallop dredge fisheries accounted for about 13% of the total *commercial* catch during 2012-2016, assuming a discard mortality rate of 80%. Recreational discard losses have accounted for 20% of the total *recreational* catch over 2012-2016, assuming a discard mortality rate of 10%.

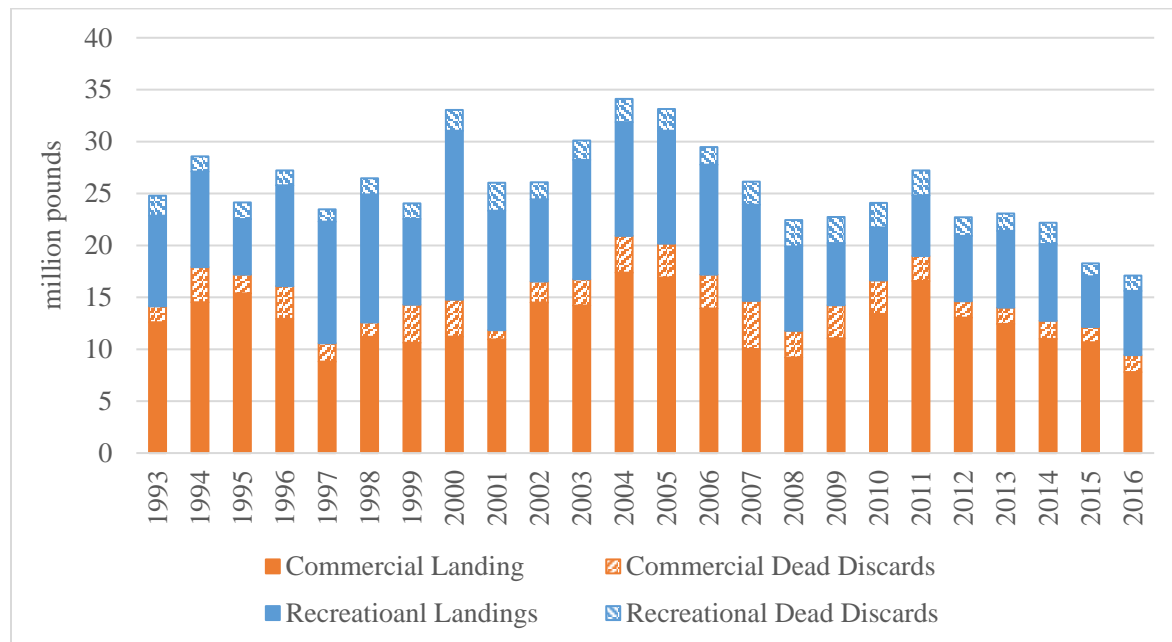


Figure 26: Components of the summer flounder fishery catch from 1993 (implementation of Amendment 2) through 2016. Source: M. Terceiro, pers. comm., July 2016, and Terceiro 2017a.

6.5.1.2 Commercial Fishery

Summer flounder support an extensive commercial fishery along the Atlantic Coast, principally from Massachusetts through North Carolina.

The following sections describe the commercial fishery for summer flounder in terms of trends in landings and discards (section 6.5.1.2.1), spatial characteristics of the fishery (6.5.1.2.2), seasonal characteristics of the fishery (6.5.1.2.3), and landings by state (6.5.1.2.4). Major commercial gear types for summer flounder were previously described in section 6.3.3.1 in the context of fishing gear impacts on habitat. Typically between 90% and 98% of the summer flounder landings are taken by bottom otter trawl gear, depending on the dataset evaluated (section 6.3.3.1).

6.5.1.2.1 Trends in Commercial Landings and Discards

Dealer reporting for commercial summer flounder landings has been mandatory only since 1994, thus, landings for years prior have greater uncertainty and may be underestimated.

Large scale, offshore commercial exploitation of summer flounder began around 1920. The fishery expanded during the 1920s and 1930s, and by 1940, commercial landings of summer flounder were estimated to have reached about 4,900 mt (10.8 million lb). Annual harvests averaged around 20 million pounds during the 1950s and early 1960s, then steadily declined during the 1960s, falling to 3,000 mt (6.6 million lb) in 1969 (MAFMC 2002; Terceiro 2001). Commercial landings increased in the mid 1970s until 1989, due to increased levels of effort in the southern winter trawl fishery (MAFMC 1993). Since 1993, the first year that a coastwide quota was implemented, commercial landings have fluctuated between a high of about 17.37 million pounds in 2004, to a low of 7.81 million pounds in 2016 (Figure 27).

Commercial summer flounder dead discards over the period 1993-2016 averaged approximately 2.49 million pounds, or about 18% of total commercial catch. Over the same time period, commercial discards also accounted for about 10% of the total catch (recreational + commercial) in weight. In recent years, commercial discards have been below this average (Table 36). A time series (1993-2015) of commercial landings and dead discards is shown in Figure 27. The current stock assessment for summer flounder assumes a commercial discard mortality of 80%. This discard mortality rate is applied to the live discard estimate regardless of the discard estimation method used.

Table 36: Summer flounder estimated commercial discards and % of total summer flounder catch in weight, 2012-2016. Source: M. Terceiro, pers. comm., and Terceiro 2017a.

	Commercial dead discards, mil lb (mt)	% of total summer flounder catch in weight
2012	1.58 (718)	7%
2013	1.57 (712)	7%
2014	1.73 (785)	8%
2015	1.48 (670)	8%
2016	1.63 (738)	10%

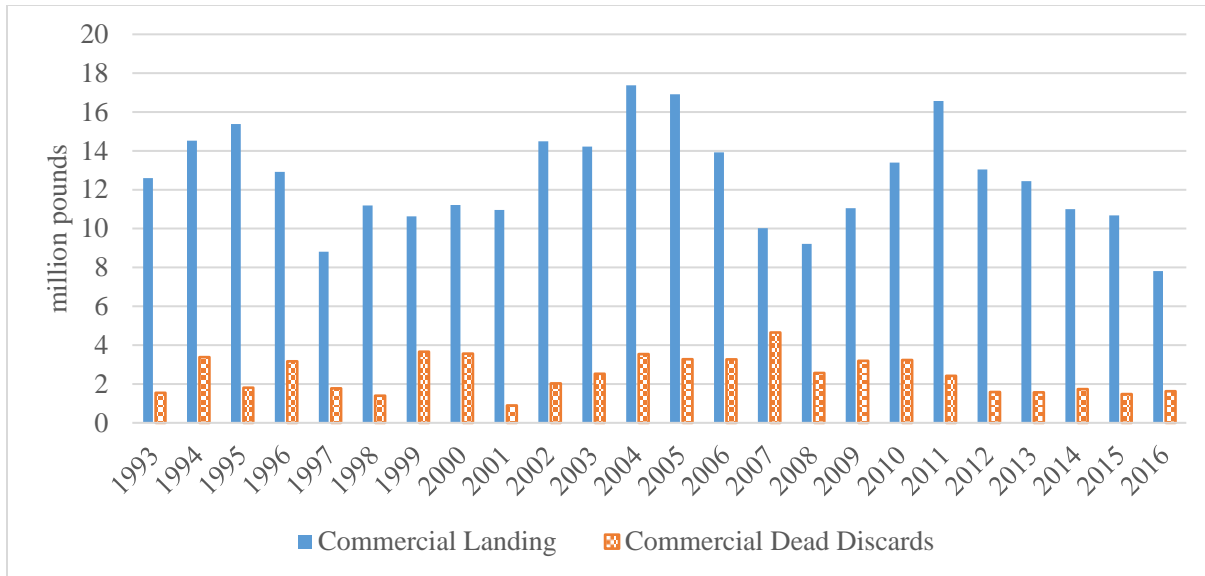


Figure 27: Summer flounder commercial discards and landings, 1993-2016. Source: M. Terceiro, personal communication, July 2016 and Terceiro 2017a.

The reasons for discarding summer flounder in the fish trawl and scallop dredge fisheries have been changing over time. For example, during 1989 to 1995, the minimum size regulation was recorded as the reason for discarding summer flounder in over 90% of the observed trawl and scallop dredge tows (NEFSC 2013). During 2012-2016, minimum size regulations were identified as the discard reason in 51% of the observed trawl tows on average, quota or trip limits in 36% of the tows, high grading in 5%, and other reasons 8% (Table 37; M. Terceiro, pers. comm.). The assessment also indicates that as a result of the increasing impact of trip limits, fishery closures, and high grading as reasons for discarding, the age structure of the summer flounder discards has also changed, with a higher proportion of older fish being discarded (NEFSC 2013).

Table 37: Percentage of observed summer flounder discards by recorded discard reason, trawl and scallop gear, 2012-2016.

	% of trawl discards	% of scallop dredge discards
Unknown	0.0%	0.1%
No market	1.6%	66.0%
Market, too small	1.8%	1.6%
Market, too large	0.1%	0.0%
Market, will spoil	1.9%	0.5%
Special sample	0.1%	0.0%
Regs., unknown	1.1%	0.4%
Regs., too small	50.6%	5.5%
Quota filled	36.1%	25.6%
Poor quality	1.6%	0.3%
High Graded	5.3%	0.2%

6.5.1.2.2 Spatial Characteristics of the Commercial Fishery

Figure 28 highlights the NMFS statistical areas accounting for more than 1 percent of the summer flounder commercial catch over 2015-2016, based on federal VTR data. Statistical area 616 is

typically responsible for the highest percentage of the catch and landings. Statistical area 539 accounted for the highest number of trips that caught summer flounder (at least 5,861 trips by federally permitted vessels over these two years).

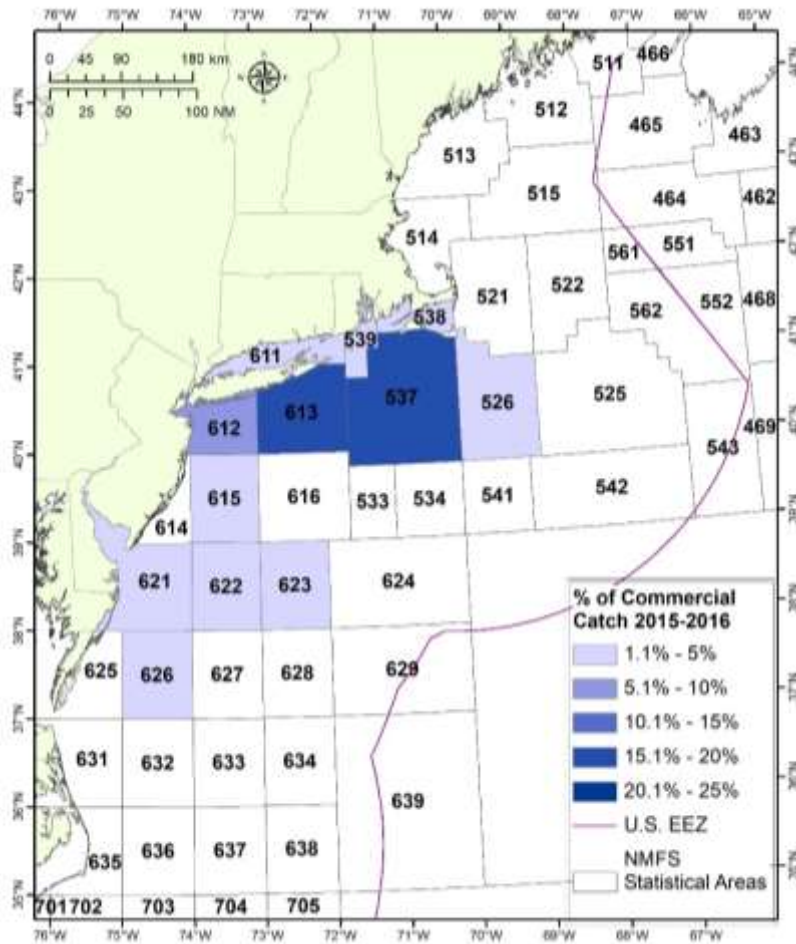


Figure 28: NMFS Statistical Areas, highlighting those that each accounted for more than 1% of VTR-reported commercial summer flounder catch, 2015-2016.

Reported fishing locations by statistical area can provide only a general location of catch. To look at landings and fishery revenues at a finer spatial scale, the NEFSC Social Sciences Branch developed a VTR-based revenue mapping model that incorporates NEFOP observer data with known fishing locations. DePiper (2014) describes this model and its application, and a summary is provided below.

Federally-permitted vessels are required to submit a VTR for each trip, the requirements of which include indicating a general fishing location as a set of geographic coordinates. These self-reported coordinates do not precisely indicate the location of fishing effort, given that only one point is provided regardless of trip length or distance covered during the trip. In the absence of spatially explicit fishery effort data for many fisheries, the VTR mapping model allows for more robust analysis using VTR data by taking into account some of the uncertainties around each reported point. Using observer data, for which precise locations are available, the model was developed to derive probability distributions for actual fishing locations, around a provided VTR point. Other

variables likely to impact the precision of a given VTR point, such as trip length, vessel size, and fishery, were also incorporated into the model. This model allows for generation of maps that predict the spatial footprint of fishing. Price information from dealer reports was used to transform VTR catches into revenues. Trip information was used to incorporate information about revenue generated from each trip, resulting in a model that can produce maps of revenue generated for a given set of specified parameters such as gear type, species, or port of landing. The revenue-mapping model can be used to identify areas important to specific fishing communities, species, gears, and seasons to establish a baseline of commercial fishing effort. The probability distributions generated from each reported VTR point create a likelihood of actual fishing locations in all directions from a given point, and do not take into account any specific directionality that may be associated with specific fishing methods or specific locations. For example, the model does not take into account fishing behavior along depth contours or other specific habitat features.

Figure 29 shows these revenue maps for commercial summer flounder landings from 2010-2015 (in 2014 dollars). Revenues are closely correlated with the total amount of landings (similar maps for summer flounder landings show a distribution very close to the revenue maps and thus are not provided here; see: <https://www.nefsc.noaa.gov/read/socialsci/fishing-footprints.php>). In general, the bulk of commercial landings and revenue for summer flounder are taken either from nearshore areas off of Rhode Island/Connecticut/eastern Long Island and New Jersey/southern Long Island, or from offshore on the continental shelf between the Delmarva Peninsula and offshore areas south of Cape Cod (Figure 29).

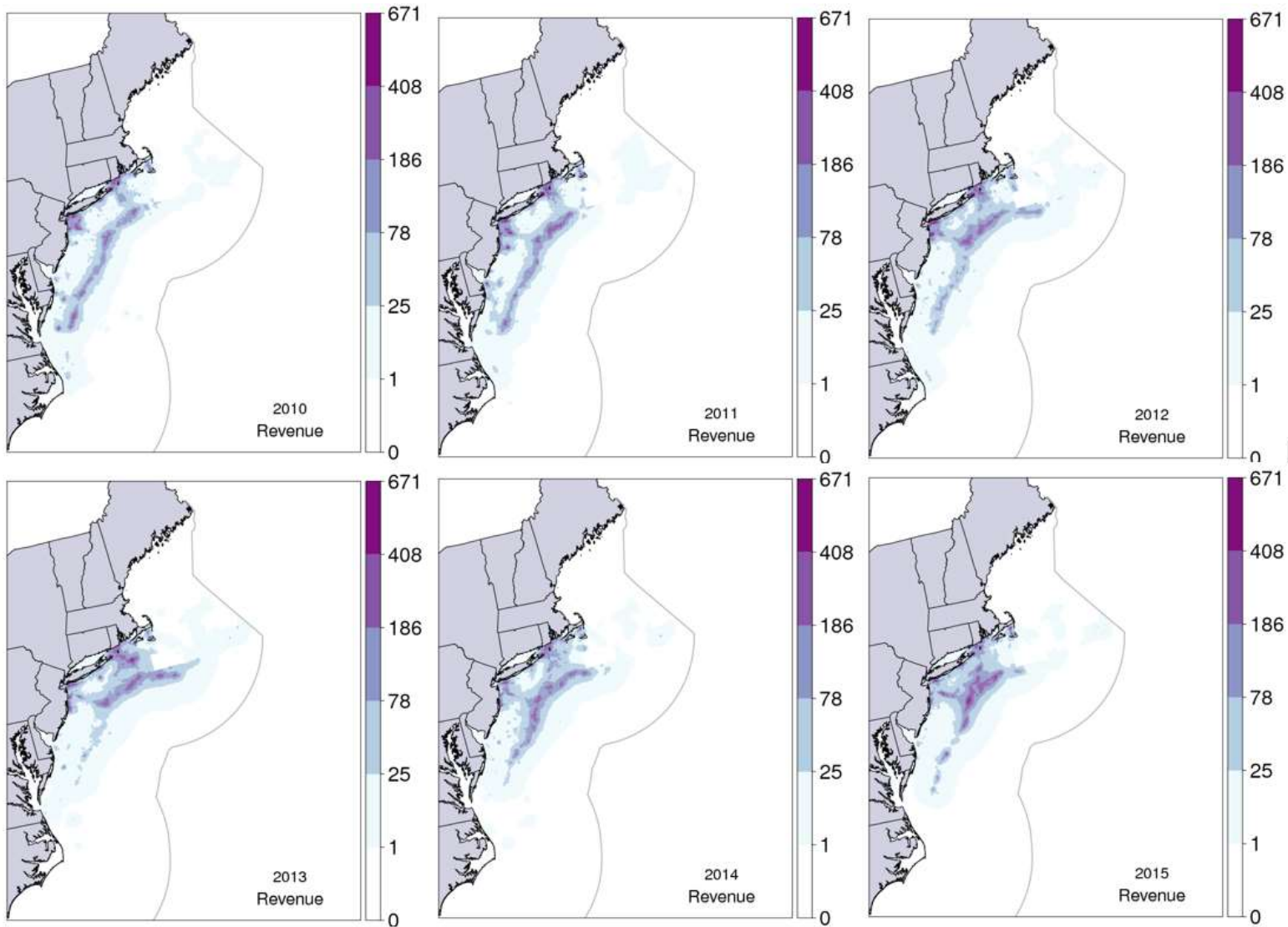


Figure 29: Commercial summer flounder revenue by catch location, 2010-2015, in 2014 real US dollars. Source: NEFSC Social Sciences Branch Fishing Footprints, based on DePiper (2014). Available at: <https://www.nefsc.noaa.gov/read/socialsci/fishing-footprints.php>.

The 2013 stock assessment examined spatial trends in commercial catch over time, with comparisons to the survey distribution over the same time frames, beginning in 1994 to coincide with the first year of mandatory vessel trip reporting. Figure 30 through Figure 33 show the results of this exercise from the assessment, with data through 2012.

The 2013 assessment report notes that "the heaviest commercial fishery catches (and by inference, effort) in the 1990s were reported just off of Cape Hatteras, concentrated around the entrances to Hudson Canyon and Narragansett Bay, and offshore along the shelf edge from the Chesapeake Bay entrance through SNE. Large catches of summer flounder continued along the shelf during the early 2000s with concentrations slightly farther north off the Delaware-Maryland-Virginia coast. This northerly trend of offshore commercial catches continued through the present decade with the largest catches now south of Rhode Island. Commercial catches of summer flounder at its southern extent are reduced after 2005. Fishery observer data show a much larger presence of large summer flounder catches on Georges Bank after 2005. The earliest years (1968-1990) of NEFSC fish trawl surveys showed the largest catches of summer flounder in inshore waters from Long Island to Cape Hatteras, with intermittent catches of summer flounder in the Georges Bank-Great South Channel strata or in the Gulf of Maine. The lowest catches occurred during the early 1990s, before increasing slowly in the late 1990s. During the rebuilding period of the 2000s, larger catches of summer flounder began appearing in northern areas, particularly south of Rhode Island and Massachusetts" (NEFSC 2013). As described in section 6.1.4, a general pattern increasing latitude in the summer flounder center of biomass from the trawl surveys can be observed since 1994 in the figures below.

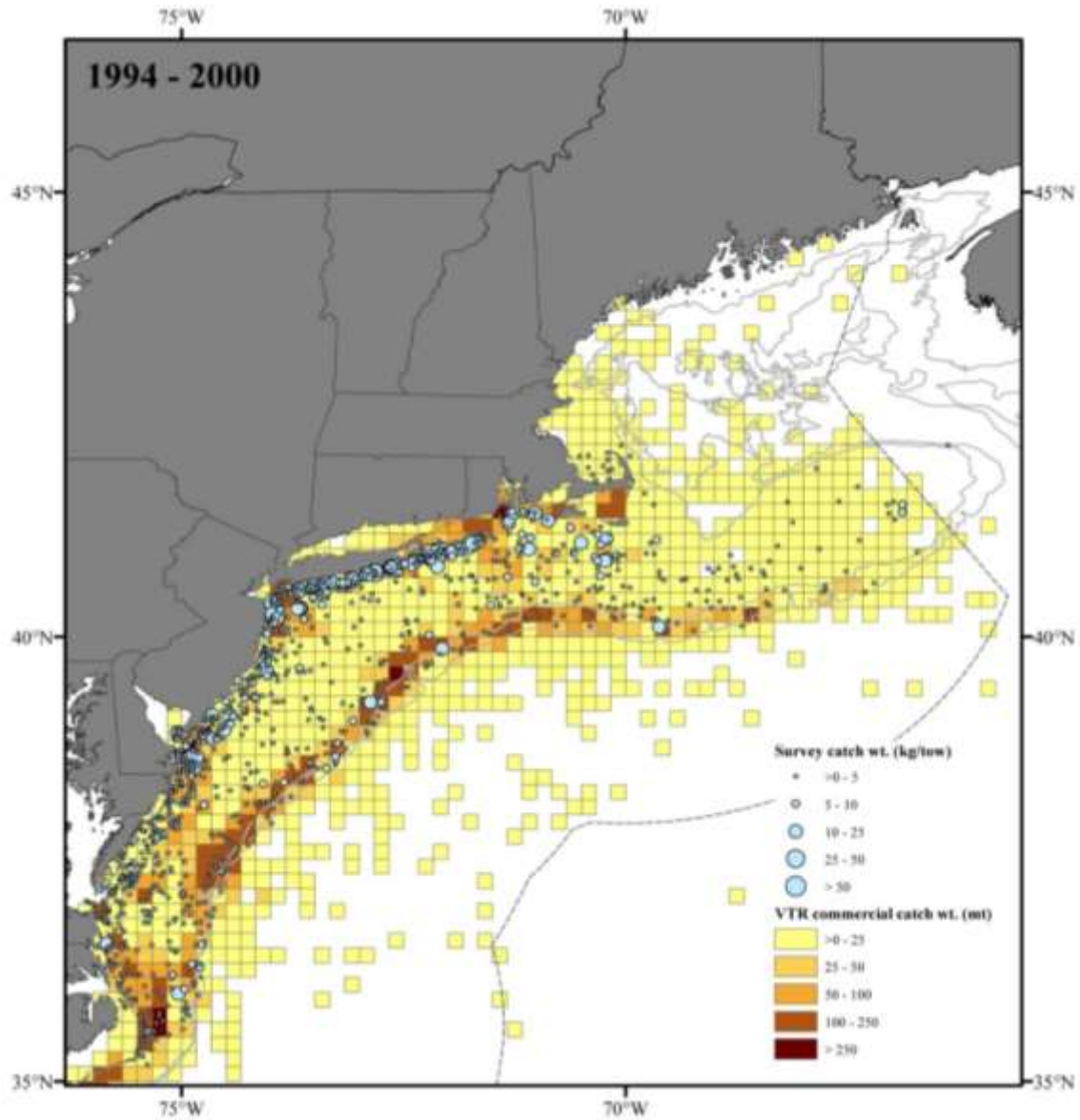


Figure 30: Spatial overlap of NEFSC trawl survey (spring and fall combined) catches (kg/tow) and commercial VTR-reported catch weight (landings and discards) binned to ten minute squares from, 1994-2000. Source: NEFSC 2013.

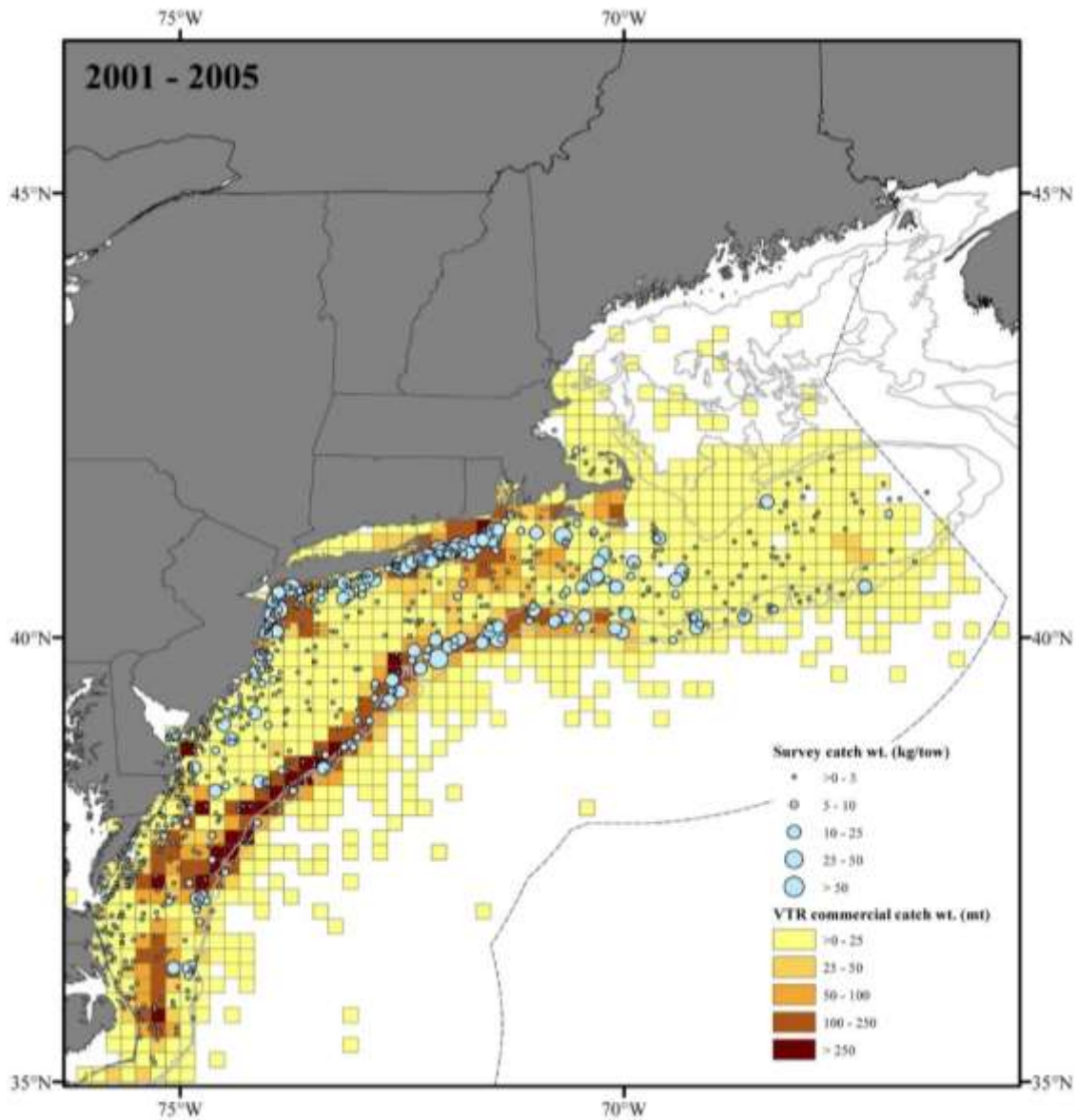


Figure 31: Spatial overlap of NEFSC trawl survey (spring and fall combined) catches (kg/tow) and commercial VTR-reported catch weight (landings and discards) binned to ten minute squares from, 2001-2005. Source: NEFSC 2013.

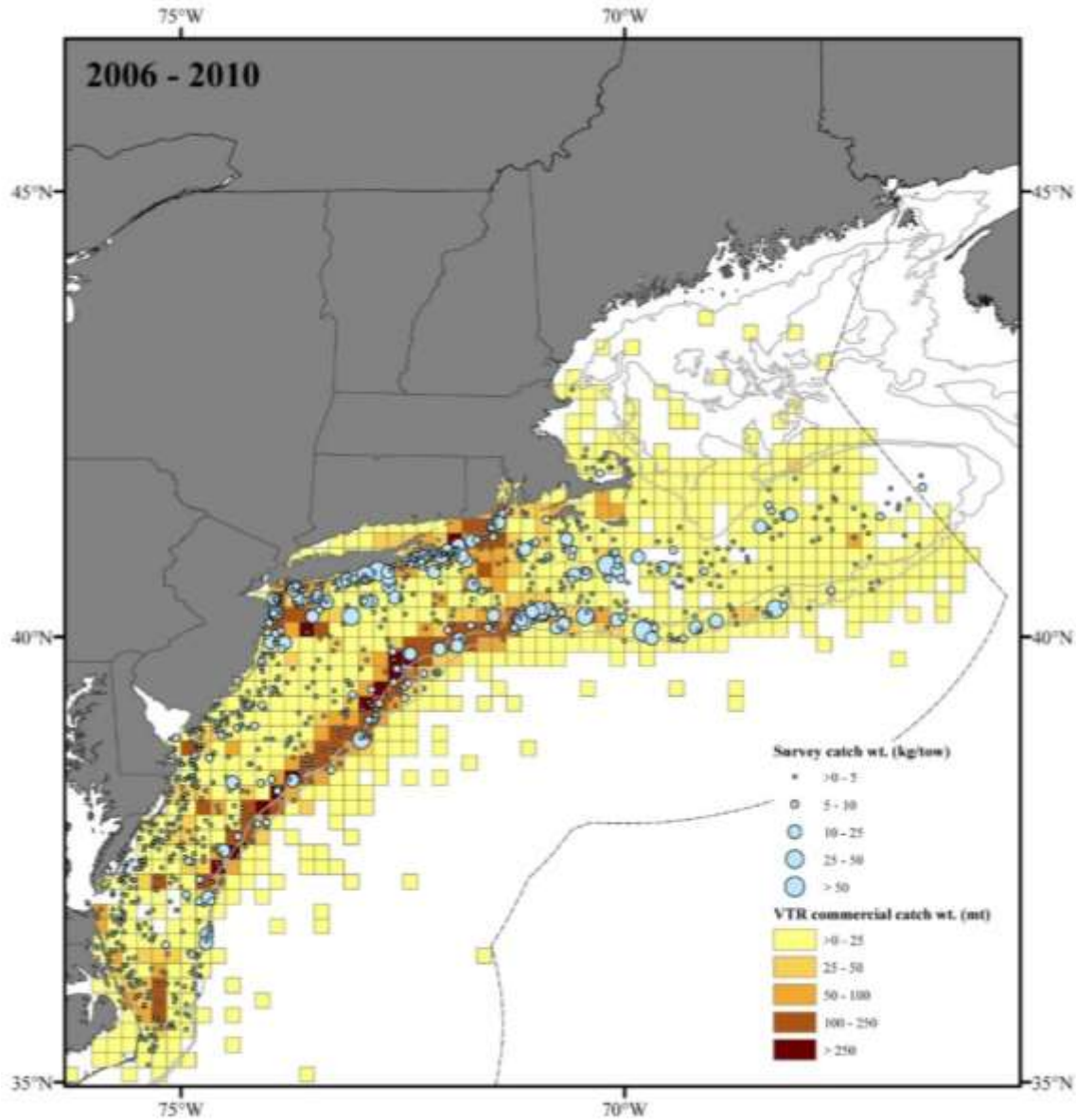


Figure 32: Spatial overlap of NEFSC trawl survey (spring and fall combined) catches (kg/tow) and commercial VTR-reported catch weight (landings and discards) binned to ten minute squares from, 2006-2010. Source: NEFSC 2013.

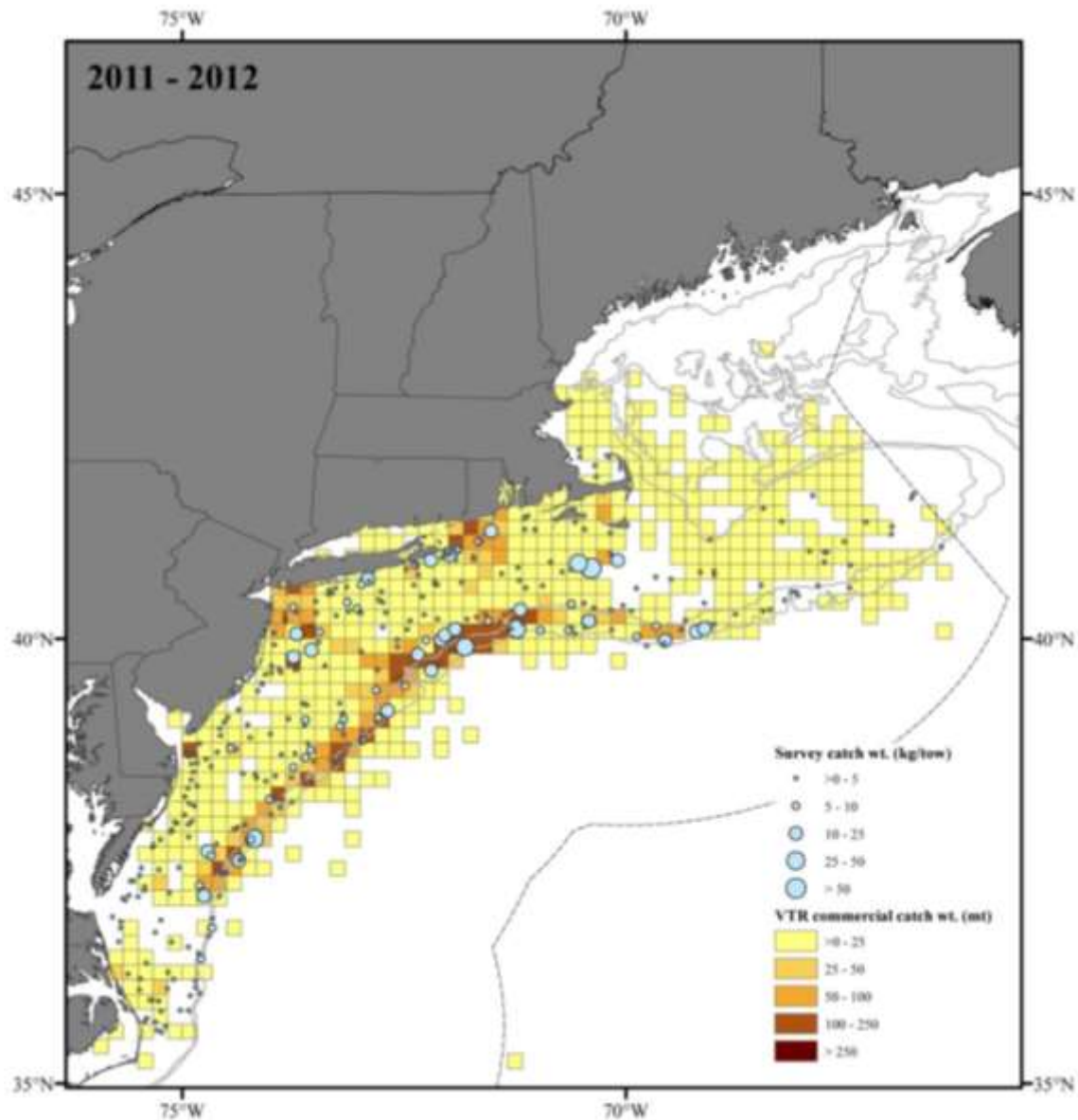


Figure 33: Spatial overlap of NEFSC trawl survey (spring and fall combined) catches (kg/tow) and commercial VTR-reported catch weight (landings and discards) binned to ten minute squares from, 2011-2012. Source: NEFSC 2013.

6.5.1.2.3 Seasonal Characteristics of the Commercial Fishery

As a percentage of coastwide harvest, more summer flounder is landed commercially in the winter months, particularly January through March (Figure 34). This corresponds with summer flounder being distributed offshore, where they are targeted by larger trawl vessels.

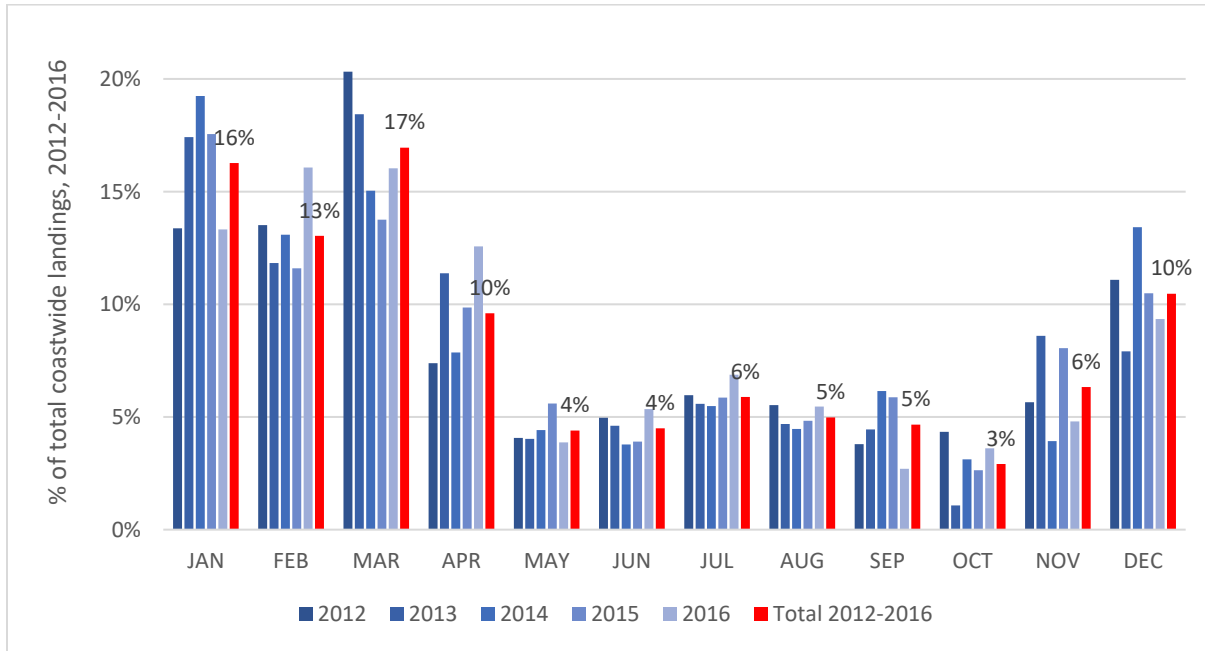


Figure 34: Commercial summer flounder landings by month as a percentage of coastwide harvest, 2012-2016, MA-NC. Total percentages for 2012-2016 are labeled (red bars). Source: NMFS AA tables.

Figure 35 shows that the months of November-April, over 75% of the landings originate from federal waters, as reported on federal VTRs. May, September, and October see a more balanced mix of federal and state waters harvest, while June-August harvest occurs mostly in state waters (Figure 35). There is some seasonal variation in landings by gear type. In the summer, more of the fishery is prosecuted in state waters with smaller vessels using a wider variety of gear types. While bottom trawls are still the dominant gear type in the summer, other gear types, such as hand lines, gill nets, and other gear types are more commonly used compared to the winter fishery (Figure 36). Larger vessels (classified as vessels 51 tons or larger) are dominant in the winter, offshore fishery, while during the spring and early fall, more of a mix of small and larger vessels participate (Figure 37).

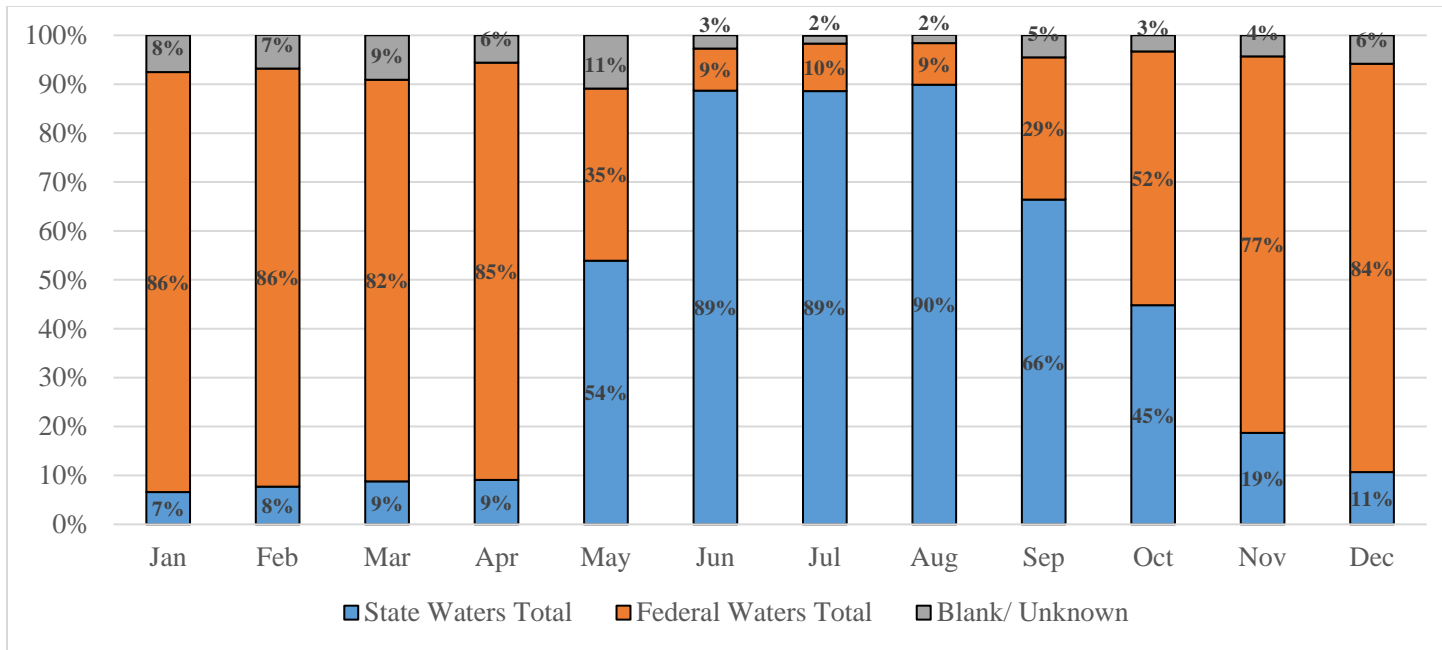


Figure 35: Commercial summer flounder landings by distance from shore by month, as reported on VTRs, 2015-2016, ME-NC.
 Source: NMFS VTR data as of May 2017.

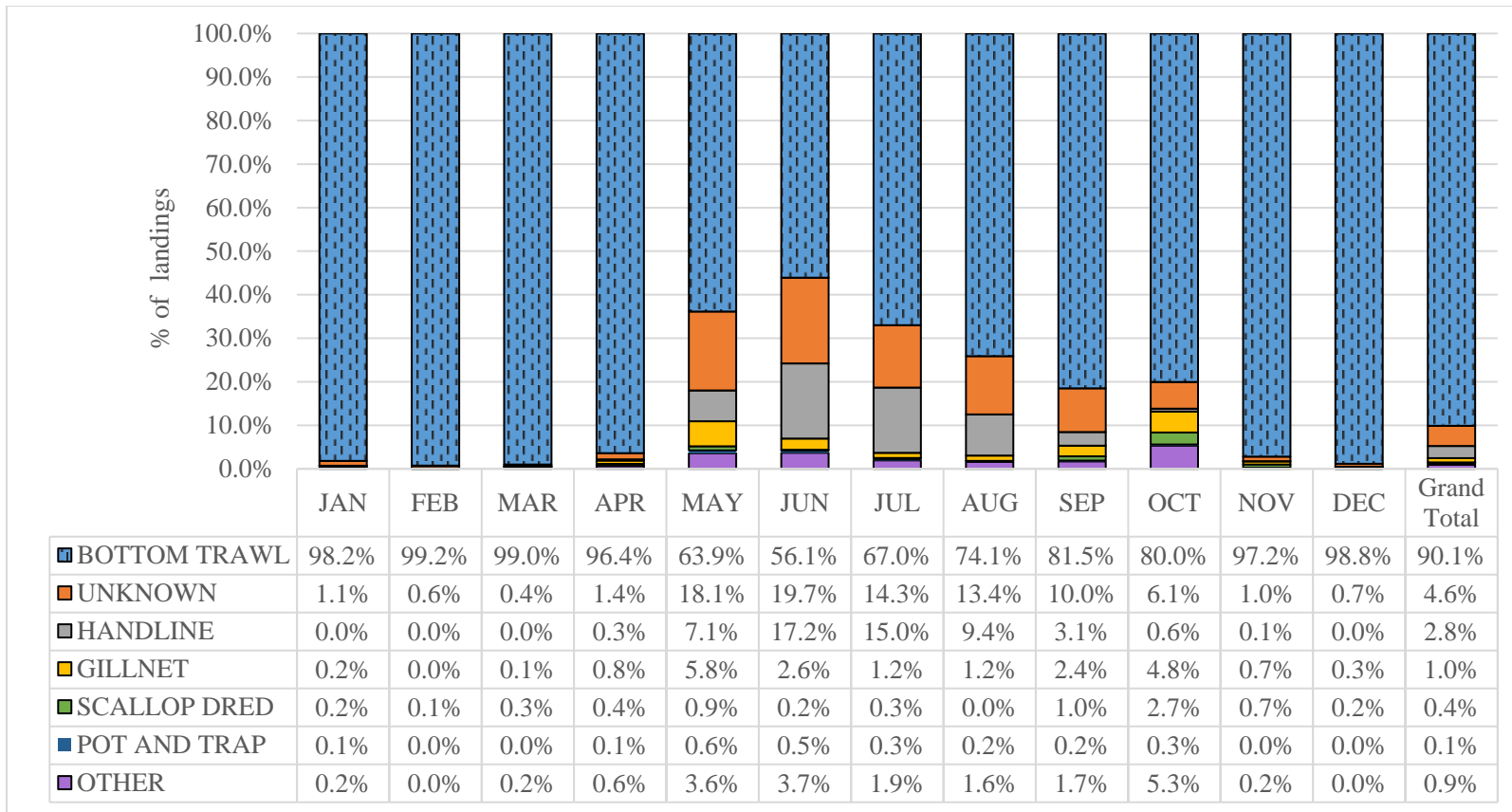


Figure 36: Percentage of commercial summer flounder landings in each month by gear type, Massachusetts through North Carolina, 2012-2016. Source: NMFS dealer data (AA tables) as of February 2018.

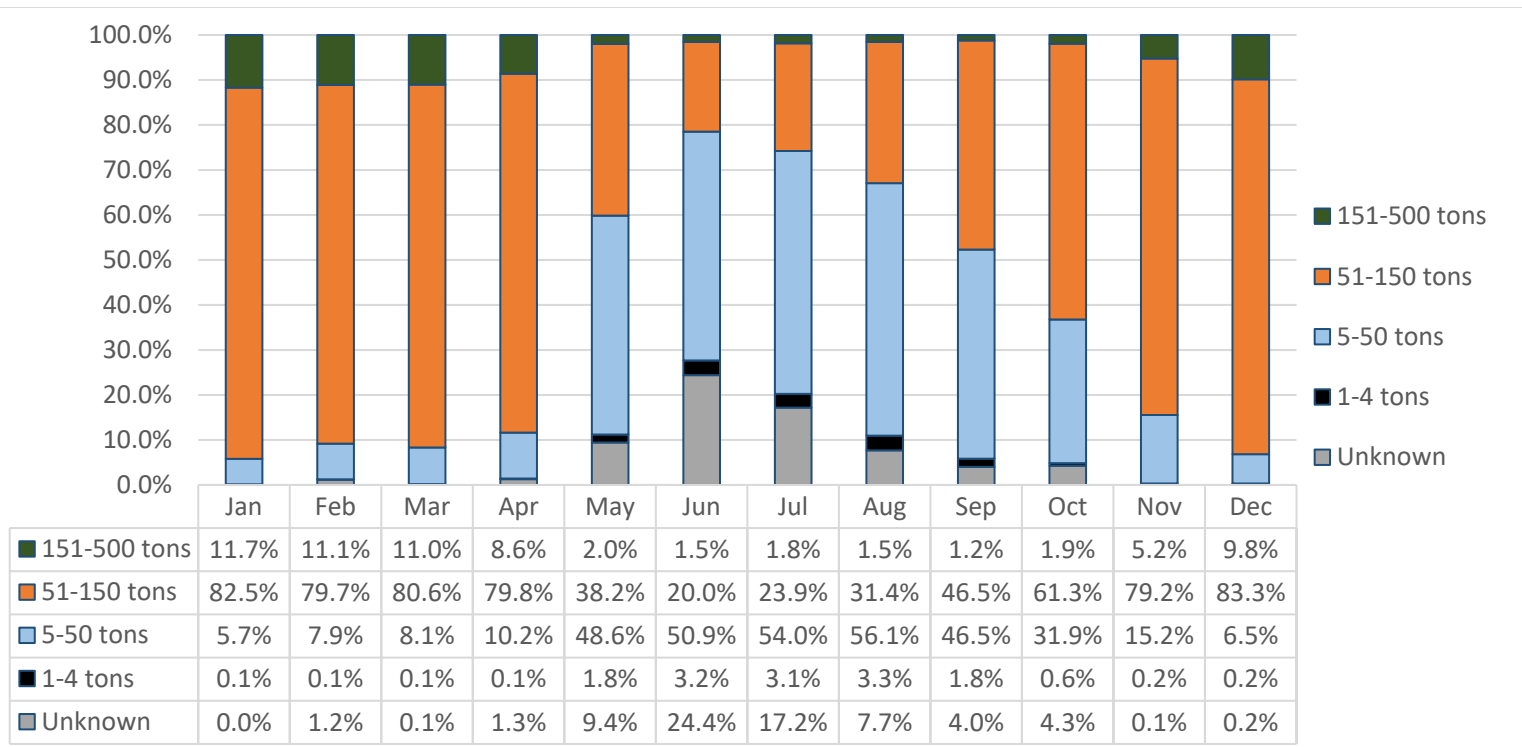


Figure 37: Average percent of commercial summer flounder landings by vessel ton class in each month, 2011-2015. Source: NMFS dealer data.

6.5.1.2.4 Landings by State

Recent Landings by State

Table 38 shows commercial landings of summer flounder by state (in millions of pounds) since the implementation of state-specific quotas in 1993.

As a percentage of coastwide landings, landings by state have generally been stable since allocations were implemented in 1993 (Figure 38). Exceptions can occur under special circumstances, such as 2012-2013 when a high amount of North Carolina landings were landed in Virginia by mutual agreement due to shoaling at Oregon Inlet, NC. Since 1993, state-level allocations have remained constant, and utilization rates have generally been high among all states involved in the summer flounder fishery.

Commercial summer flounder landings from Maine, New Hampshire, and Delaware are not shown in Figure 2 since landings are minimal, if they occur at all. No commercial summer flounder landings have been reported in Maine since 2010. New Hampshire has indicated that they do not allow commercial harvest of summer flounder and that their reported landings (less than 100 pounds in total) were probably misidentified. Delaware landings have consistently been 0.1% or less of coastwide landings each year since 1993 and have averaged less than 0.01% in recent years.

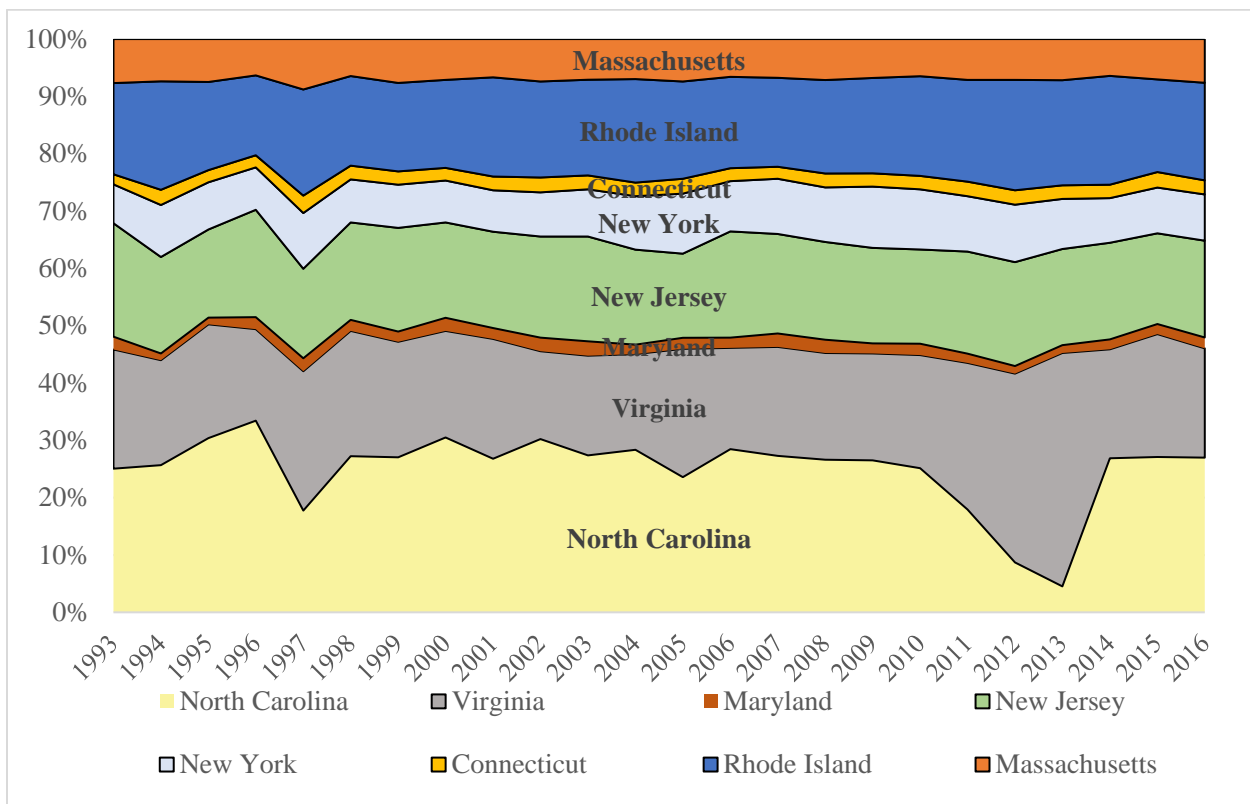


Figure 38: Percentage of coastwide landings by state 1993-2016, Massachusetts through North Carolina (excluding Delaware). Maine, New Hampshire, and Delaware each account for less than 0.1% of landings each year. Maryland and Virginia.

Table 38: Commercial summer flounder landings by state in millions of pounds, 1993-2016. C= confidential. New Hampshire's landings were not provided but are negligible (less than 100 pounds total). The confidentiality status of Delaware's data have not been confirmed. Data source: ACCSP

	ME	MA	RI	CT	NY	NJ	DE	MD	VA	NC	Coast
1993	C	0.954	1.982	0.222	0.844	2.463	C	0.278	2.591	3.121	12.469
1994	C	1.031	2.648	0.371	1.269	2.354	C	0.165	2.559	3.593	13.997
1995	C	1.127	2.320	0.319	1.245	2.319	C	0.175	2.995	4.582	15.092
1996	C	0.800	1.763	0.266	0.936	2.369	C	0.266	2.019	4.227	12.662
1997	C	0.744	1.565	0.257	0.822	1.320	C	0.192	2.055	1.501	8.465
1998	C	0.707	1.712	0.263	0.822	1.863	C	0.211	2.397	2.983	10.973
1999	C	0.812	1.635	0.245	0.801	1.917	C	0.191	2.134	2.869	10.618
2000	C	0.789	1.704	0.245	0.812	1.848	C	0.252	2.063	3.387	11.118
2001	C	0.694	1.799	0.247	0.752	1.745	C	0.197	2.173	2.785	10.422
2002	C	1.009	2.286	0.357	1.053	2.407	C	0.327	2.090	4.129	13.662
2003	-	0.926	2.178	0.317	1.073	2.385	C	0.329	2.269	3.572	13.056
2004	C	1.193	3.085	0.406	1.594	2.831	C	0.284	2.853	4.844	17.098
2005	C	1.274	2.926	0.449	1.804	2.529	C	0.333	3.862	4.064	17.251
2006	C	0.921	2.227	0.317	1.227	2.591	C	0.248	2.469	3.981	13.991
2007	C	0.661	1.516	0.205	0.942	1.698	C	0.229	1.858	2.670	9.787
2008	C	0.646	1.474	0.221	0.860	1.541	C	0.209	1.685	2.407	9.045
2009	C	0.732	1.794	0.251	1.152	1.799	C	0.191	2.012	2.859	10.793
2010	-	0.852	2.289	0.308	1.380	2.166	C	0.261	2.594	3.311	13.163
2011	-	1.132	2.824	0.401	1.537	2.831	C	0.259	4.065	2.854	15.905
2012	-	0.891	2.409	0.315	1.255	2.269	C	0.165	4.123	1.090	12.519
2013	-	0.859	2.193	0.281	1.046	2.004	C	0.164	4.869	0.542	11.959
2014	-	0.696	2.056	0.253	0.846	1.826	C	0.187	2.058	2.912	10.835
2015	-	0.748	1.716	0.287	0.847	1.682	C	0.187	2.275	2.879	10.622
2016	-	0.585	1.306	0.190	0.619	1.297	C	0.144	1.465	2.071	7.680

Table 39 shows the percentages of summer flounder landings by state over a 5-year time period (2012-2016) and a 10-year time period (2007-2016). Note that the percentages for recent years are of the total harvest, not the total quota, so a percentage that is over or under a state's current allocation does not necessarily mean that state was over or under their allocation on average.

Table 39: Percentage of landings within the management unit from each state Maine-North Carolina, 2012-2016 and 2007-2016, and current state-by-state allocations. Source: ACCSP database. Specific poundage amounts not shown due to confidentiality issues with some states.

State	% of landings by state, 5-YR (2012-2016)	% of landings by state, 10-YR (2007-2016)	Current Allocation (1980-1989)
ME	0.00000%	0.00405%	0.04756%
NH	0.00000%	0.00001%	0.00046%
MA	7.05052%	6.95463%	6.82046%
RI	18.04914%	17.44612%	15.68298%
CT	2.48158%	2.42149%	2.25708%
NY	8.45865%	9.23102%	7.64699%
NJ	16.90554%	17.02198%	16.72499%
DE	0.01332%	0.01765%	0.01779%
MD	1.75850%	1.88532%	2.0391%
VA	27.59778%	24.01402%	21.31676%
NC	17.68497%	21.00370%	27.44584%
Total	100.00%	100.00%	100.00%

By Month by State

Table 40 shows commercial summer flounder landings by state and month as a percentage of overall coastwide landings, combined over 2012-2016. Table 41 shows commercial summer flounder landings by month as a percentage of each state's annual landings. Combined, these two tables provide insights into the seasonality of summer flounder commercial harvest by state.

Overall, more summer flounder are landed in the winter compared to the summer fishery; about two thirds of annual commercial summer flounder landings typically occur during the months of December through April (Table 40). Virginia and North Carolina vessels, which currently receive nearly 50% of the coastwide allocation, are much more active in the winter months and have low activity in the months of May-September (Table 41). It follows that as a percentage of coastwide annual landings, the largest percentages come from Virginia and North Carolina during the winter months (Table 40). Rhode Island and New Jersey, which have the next highest allocations, tend to spread their fishing effort more evenly throughout the year. Rhode Island is somewhat more active February-April and New Jersey has higher activity in September-November and January. The northern states of New York through Massachusetts are generally more active in the summer months compared to the southern states of New Jersey and south (Table 40; Table 41).

Table 40: Commercial summer flounder landings by state and month as the percentage of the total coastwide landings, 2012-2016. Note: based on state of landing, not accounting for any quota transfers. Color coding indicates highest percentage (dark green) to lowest percentage (dark red). Source: NMFS dealer data.

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
MA	0.45%	0.44%	0.29%	0.40%	0.12%	1.27%	1.87%	1.48%	0.37%	0.01%	0.08%	0.00%	6.78%
RI	0.37%	2.71%	3.31%	2.23%	1.42%	1.44%	1.43%	1.25%	0.91%	0.65%	1.03%	0.98%	17.73%
CT	0.28%	0.22%	0.29%	0.29%	0.16%	0.26%	0.25%	0.18%	0.09%	0.05%	0.07%	0.25%	2.40%
NY	0.53%	0.88%	0.53%	0.33%	1.11%	0.76%	0.87%	0.96%	0.76%	0.26%	0.14%	0.27%	7.40%
NJ	4.02%	0.95%	1.19%	0.30%	0.78%	0.65%	1.28%	0.79%	2.39%	1.57%	2.16%	0.68%	16.77%
DE	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.01%
MD	0.04%	0.04%	0.19%	0.24%	0.10%	0.04%	0.05%	0.23%	0.07%	0.14%	0.08%	0.29%	1.49%
VA	4.63%	2.70%	9.32%	4.96%	0.21%	0.05%	0.13%	0.03%	0.03%	0.17%	2.57%	4.90%	29.69%
NC	5.96%	5.10%	1.84%	0.85%	0.49%	0.02%	0.01%	0.04%	0.05%	0.07%	0.21%	3.09%	17.73%
Total	16.27%	13.03%	16.95%	9.60%	4.40%	4.50%	5.89%	4.98%	4.66%	2.92%	6.32%	10.47%	100%

Table 41: Commercial summer flounder landings by state and month as the percentage of each state's total landings, 2012-2016. Note: based on state of landing, not accounting for any quota transfers. Color coding indicates highest percentage (dark green) to lowest percentage (dark red). Source: NMFS dealer data.

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Total
MA	6.59%	6.43%	4.30%	5.94%	1.71%	18.80%	27.60%	21.84%	5.49%	0.11%	1.13%	0.06%	100%
RI	2.06%	15.30%	18.67%	12.59%	8.02%	8.14%	8.07%	7.07%	5.11%	3.65%	5.78%	5.53%	100%
CT	11.69%	9.36%	11.90%	12.05%	6.86%	10.69%	10.52%	7.58%	3.74%	2.08%	3.08%	10.45%	100%
NY	7.15%	11.87%	7.13%	4.46%	15.03%	10.22%	11.71%	13.04%	10.28%	3.57%	1.83%	3.71%	100%
NJ	23.97%	5.65%	7.10%	1.77%	4.66%	3.90%	7.63%	4.71%	14.28%	9.36%	12.90%	4.07%	100%
DE	0.00%	0.00%	2.16%	15.27%	24.51%	7.13%	14.26%	27.88%	8.21%	0.27%	0.14%	0.18%	100%
MD	2.70%	2.40%	12.79%	15.93%	6.60%	2.50%	3.05%	15.60%	4.43%	9.30%	5.16%	19.54%	100%
VA	15.59%	9.10%	31.38%	16.70%	0.71%	0.17%	0.44%	0.11%	0.09%	0.59%	8.64%	16.49%	100%
NC	33.61%	28.76%	10.37%	4.81%	2.79%	0.13%	0.08%	0.24%	0.26%	0.37%	1.17%	17.41%	100%
Coast	16.27%	13.03%	16.95%	9.60%	4.40%	4.50%	5.89%	4.98%	4.66%	2.92%	6.32%	10.47%	100%

By Area by State

Figure 39 shows summer flounder commercial landings by distance from shore by state (i.e., state vs. federal waters) for 2015-2016, as reported on federal VTRs. This data indicate that some states prosecute their fishery primarily in federal waters/offshore (i.e., Virginia and North Carolina), while other states have substantial landings originating from both state and federal waters. Note that Delaware landings are incidental; Delaware does not have a directed fishery for summer flounder (meaning their vessels are not targeting summer flounder and all landings are incidental). The percentage of landings originating from state waters may in reality be higher than portrayed here, as this dataset does not include state-only permitted vessels fishing only in state waters.

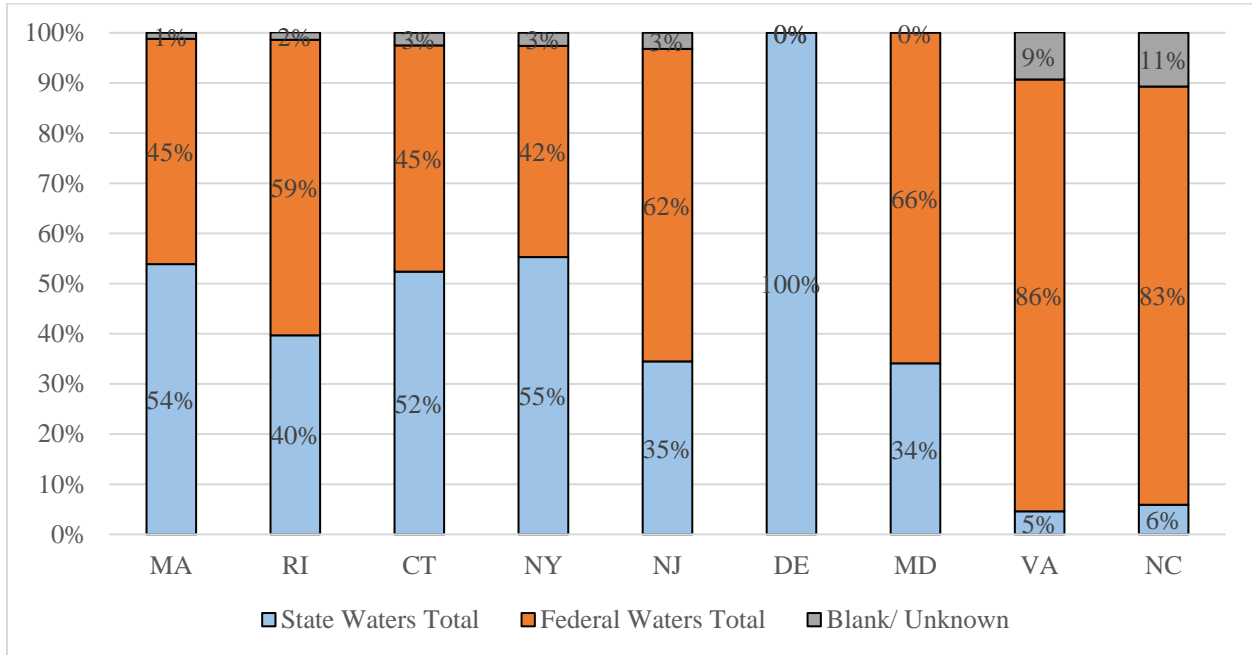


Figure 39: Commercial summer flounder landings by distance from shore by state, as reported on VTRs, 2015-2016. Source: NMFS VTR data as of May 2017. Note: does not include state-level-only VTR data.

By Gear Type by State

Figure 40 shows recent percentages of landings by gear type in each state according to dealer data merged with VTR information (AA tables), illustrating that landings in most states originate overwhelmingly from bottom trawl gear, especially the states of New Jersey, Virginia, and North Carolina, which are all over 95% trawl gear. Several states have a substantial amount of “unknown” gear type landings in the dealer data, indicating that data quality of the gear type variable in dealer data varies by state and may not be reliable in each state within the management unit. However, completing this analysis with VTR data would not include state-only permitted vessel landings.

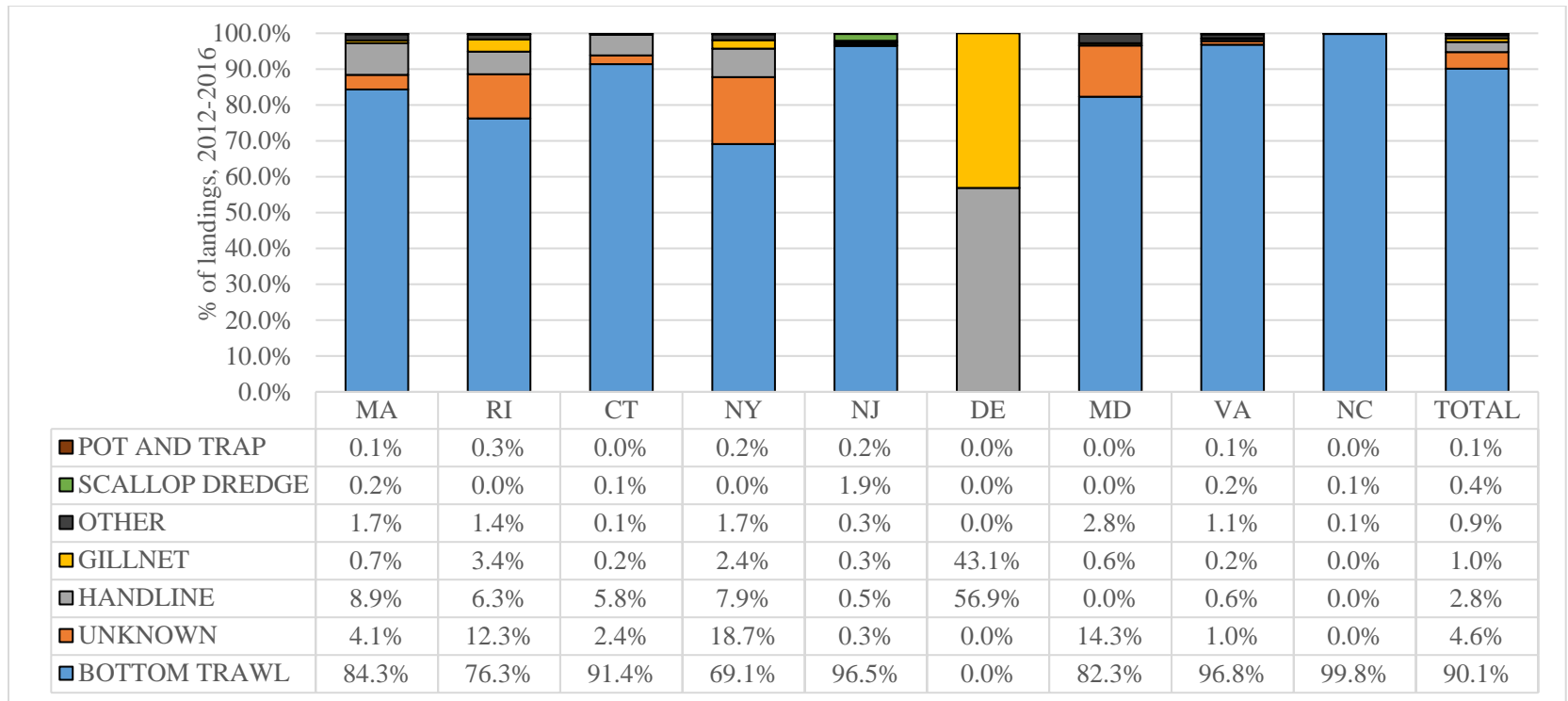


Figure 40: Percentage of commercial summer flounder landings in each state by gear type, Massachusetts through North Carolina, 2012-2016. Source: NMFS dealer data (AA tables) as of February 2018.

By Vessel Size by State

Figure 41 shows recent percentages of landings by vessel tonnage class in each state. The predominant size tonnage class for vessels landing in North Carolina and Virginia, the states with the highest quota allocations, is 51-150 tons. Relative to other states, Virginia and North Carolina also have a higher percentage of vessels in the largest tonnage class for summer flounder, 151-500 tons, making up about 11% of each of their fleets. The 51-150 ton class is the most common vessel size class for vessels landing in Rhode Island, Connecticut, New Jersey, and Maryland. The most common vessel size class for vessels landing in Massachusetts and New York is 5-50 tons. Vessels >150 tons and <5 tons represent a relatively small component of landings in all states active in the summer flounder fishery (Figure 41).

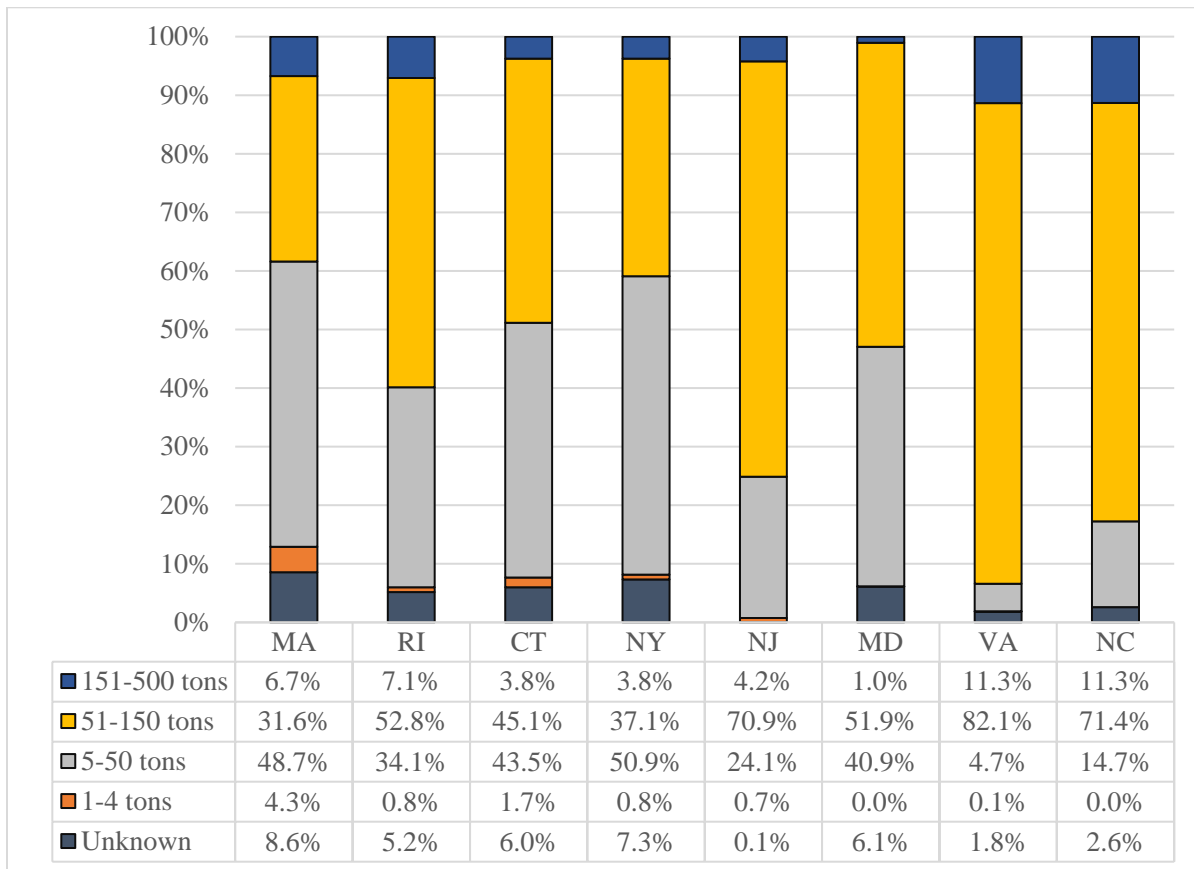


Figure 41: Percent of summer flounder landings by state by vessel tonnage class, 2007-2016.

6.5.1.3 Recreational Fishery

There is a significant recreational fishery for summer flounder, primarily in state waters when the fish migrate inshore during the warm summer months. Summer flounder have historically been highly sought by sport fishermen, especially in New York and New Jersey waters. Characteristics of the recreational fishery are summarized in the sections below. Because this action does not directly impact the recreational fishery for summer flounder, only a brief summary is provided here.

NMFS has conducted recreational fishing surveys since 1979 to obtain estimates of participation, effort, and catch by recreational anglers in marine waters. Recreational data for years 2004 and later are available from the Marine Recreational Information Program (MRIP). For years prior to 2004, recreational data were generated by the Marine Recreational Fishery Statistics Survey (MRFSS). Recreational catch and landings for summer flounder peaked in 1983 with 32.11 million fish caught and 21.00 million fish landed. Catch reached a low in 1989 with 2.69 million fish caught, while landings reached a low in 2017 with 1.03 million fish landed (Table 42).

MRIP data indicate that on average, about 82% of recreational summer flounder landings (in number of fish) in the past ten years (2008-2017) were caught by anglers fishing on private or rental boats, about 13% from anglers aboard party or charter boats, and 5% from shore (Figure 42). For-hire vessels carrying passengers in federal waters must obtain a federal party/charter permit. In 2016, there were 763 party and charter vessels that held summer flounder federal for-hire permits. Many of these vessels also hold recreational permits for scup and black sea bass.

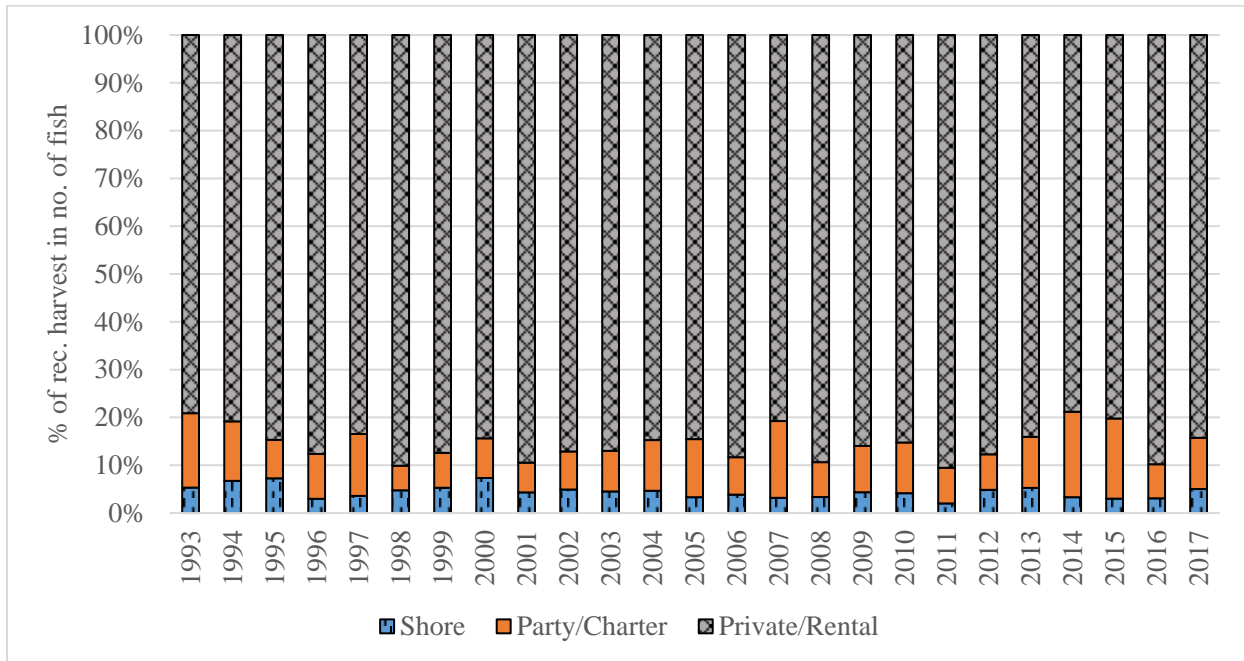


Figure 42: The percent of summer flounder harvested by recreational fishing mode, Maine through North Carolina, 1993-2017.

Table 42: Recreational summer flounder landings, catch, mean weight of landed fish, and percent discarded, from the NMFS recreational statistics databases, Maine through North Carolina, 1981-2017.

Year	Catch (number of fish)	Landings (number of fish)	Landings (pounds)	Mean weight of landed fish (lb)	% Discarded
1981	13,578,784	9,566,574	10,081,009	1.05	30%
1982	23,562,020	15,472,700	18,233,138	1.18	34%
1983	32,062,267	20,996,307	27,969,296	1.33	35%
1984	29,784,927	17,475,171	18,764,678	1.07	41%
1985	13,525,921	11,066,191	12,489,684	1.13	18%
1986	25,292,462	11,620,861	17,861,284	1.54	54%
1987	21,023,452	7,864,762	12,167,243	1.55	63%
1988	17,170,738	9,959,659	14,624,189	1.47	42%
1989	2,676,591	1,716,765	3,158,026	1.84	36%
1990	9,100,825	3,793,585	5,134,330	1.35	58%
1991	16,074,809	6,067,651	7,959,828	1.31	62%
1992	11,909,554	5,002,106	7,147,691	1.43	58%
1993	22,904,142	6,494,041	8,830,916	1.36	72%
1994	17,725,048	6,702,691	9,327,506	1.39	62%
1995	16,307,629	3,325,714	5,421,094	1.63	80%
1996	18,994,405	6,996,985	9,820,336	1.40	63%
1997	20,027,081	7,166,820	11,865,867	1.66	64%
1998	22,085,841	6,979,095	12,476,561	1.79	68%
1999	21,377,718	4,106,995	8,366,202	2.04	81%
2000	25,384,426	7,801,074	16,467,529	2.11	69%
2001	28,187,215	5,293,611	11,636,796	2.20	81%
2002	16,674,286	3,262,159	8,008,107	2.45	80%
2003	20,531,904	4,558,670	11,638,493	2.55	78%
2004	20,336,209	4,316,498	11,021,884	2.55	79%
2005	25,805,581	4,027,466	10,915,335	2.71	84%
2006	21,400,010	3,950,283	10,504,639	2.66	82%
2007	20,731,500	3,107,578	9,336,713	3.00	85%
2008	22,896,846	2,349,873	8,150,661	3.47	90%
2009	24,085,181	1,806,178	6,030,381	3.34	93%
2010	23,721,585	1,501,467	5,108,358	3.40	94%
2011	21,558,699	1,839,876	5,955,714	3.24	91%
2012	16,528,455	2,272,221	6,489,806	2.86	86%
2013	16,105,140	2,521,366	7,355,057	2.92	84%
2014	18,969,451	2,458,003	7,389,014	3.01	87%
2015	12,152,658	1,621,480	4,721,147	2.91	87%
2016	14,170,750	2,027,770	6,182,405	3.05	86%
2017	8,441,805	1,028,483	3,188,669	3.10	88%

On average, an estimated 86 percent of the landings (in numbers of fish) occurred in state waters over the past ten years (Figure 43). By state, the majority of summer flounder are typically landed in New York and New Jersey (Table 43).

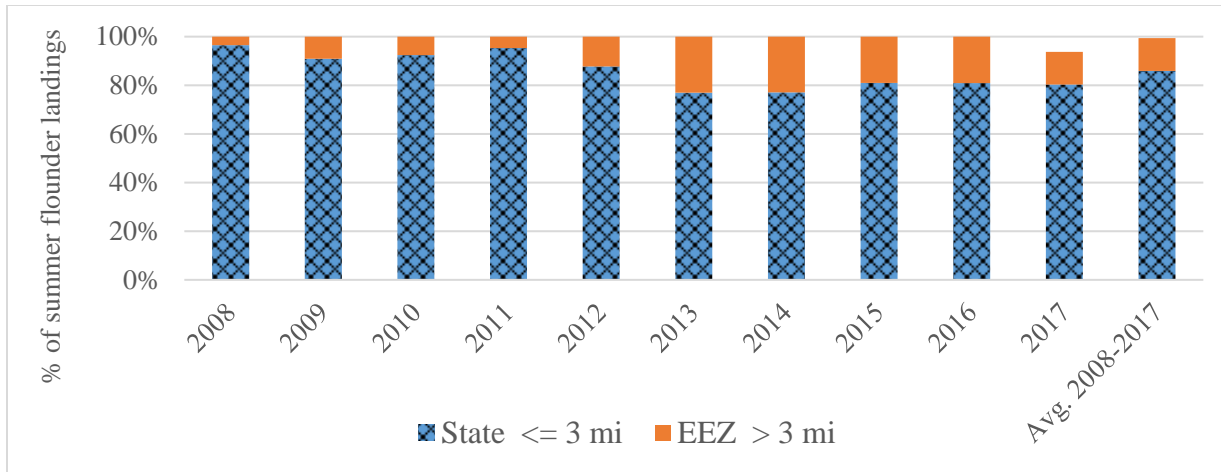


Figure 43: Estimated percentage of summer flounder recreational landings in state vs. federal waters, Maine through North Carolina, 2008-2017.

Table 43: State contribution (as a percentage) to total recreational landings of summer flounder (in numbers of fish), from Maine through North Carolina, 2015-2017.⁶

State	2015	2016	2017	Avg 2015-2017
Maine	0.0%	0.0%	0.0%	0.0%
New Hampshire	0.0%	0.0%	0.0%	0.0%
Massachusetts	4.9%	2.7%	2.6%	3.4%
Rhode Island	10.1%	4.3%	6.1%	6.8%
Connecticut	5.7%	10.7%	8.5%	8.3%
New York	30.3%	35.1%	21.5%	29.0%
New Jersey	30.7%	37.2%	43.9%	37.3%
Delaware	3.2%	4.4%	3.3%	3.6%
Maryland	2.7%	1.1%	2.5%	2.1%
Virginia	9.8%	3.5%	9.0%	7.4%
North Carolina	2.5%	0.9%	2.5%	2.1%
Total	100.0%	100.0%	100.0%	100.0%

6.5.2 Socioeconomic Characteristics and Participation in the Commercial Fishery

Additional information is provided in this section on the socioeconomic characteristics of the fishery, given the focus of this proposed action on management changes that would impact these characteristics.

6.5.2.1 Value and Revenue

For the years 1994 through 2016, NMFS dealer data indicate that summer flounder total ex-vessel revenue (adjusted to 2016 dollars to account for inflation) from Maine to North Carolina ranged from a low of \$21.30 million in 1996 to a high of \$34.80 million in 2004. The adjusted mean price per pound for summer flounder ranged from a low of \$1.74 in 2011 (\$1.84 in 2011 dollars) to a high of \$3.64 in 2016. In 2016, 7.71 million pounds of summer flounder were landed generating \$27.35 million in total ex-vessel revenue (an average of \$3.64 per pound; Figure 44).

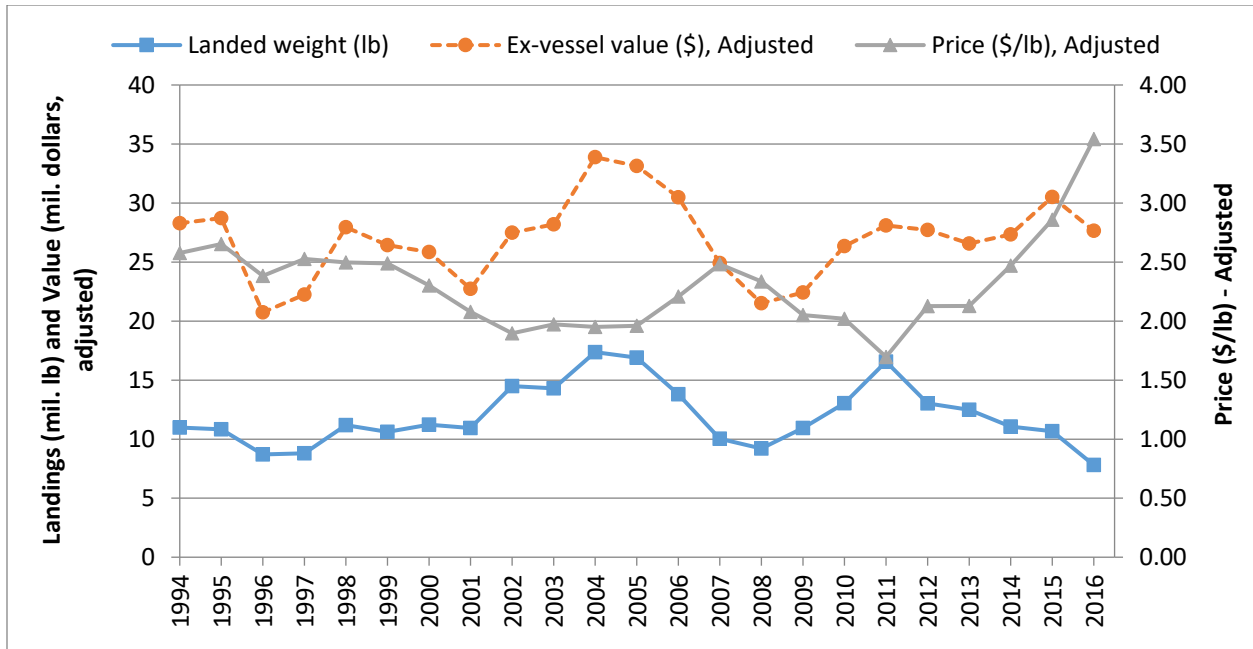


Figure 44: Landings, ex-vessel value, and price per pound for summer flounder, Maine through North Carolina, 1994-2016. Ex-vessel value and price are adjusted to real 2016 dollars.

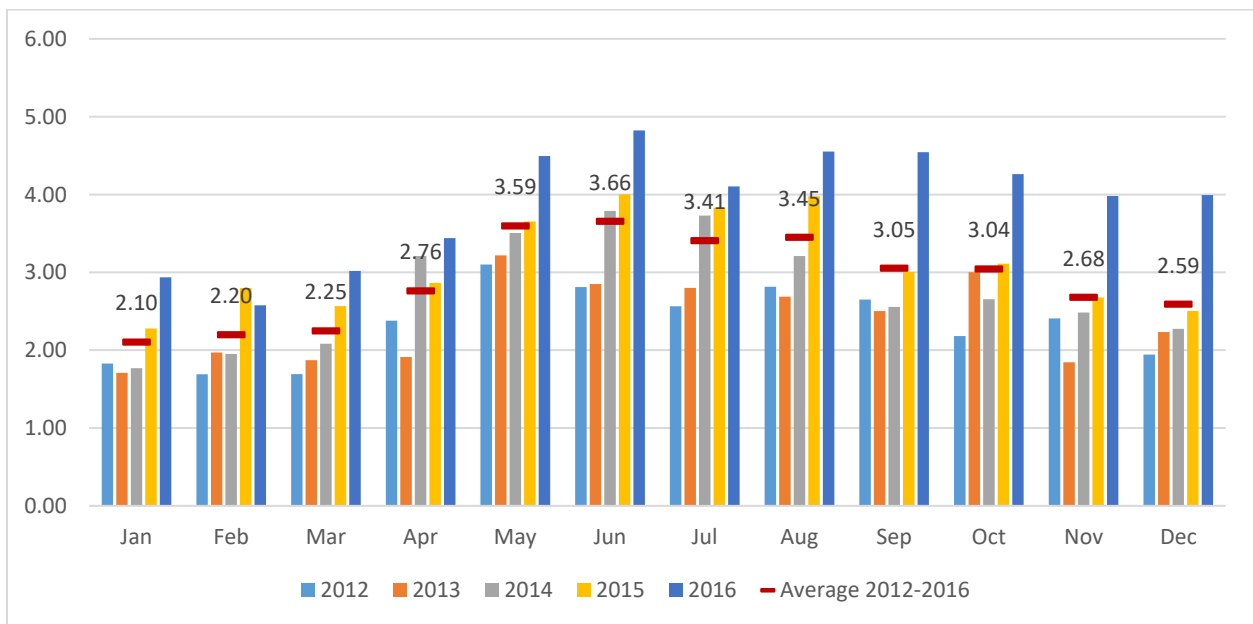


Figure 45: Average ex-vessel price per pounds (\$) (adjusted to 2016 US dollars) for summer flounder by month, with monthly average (red line) labeled, 2012-2016.

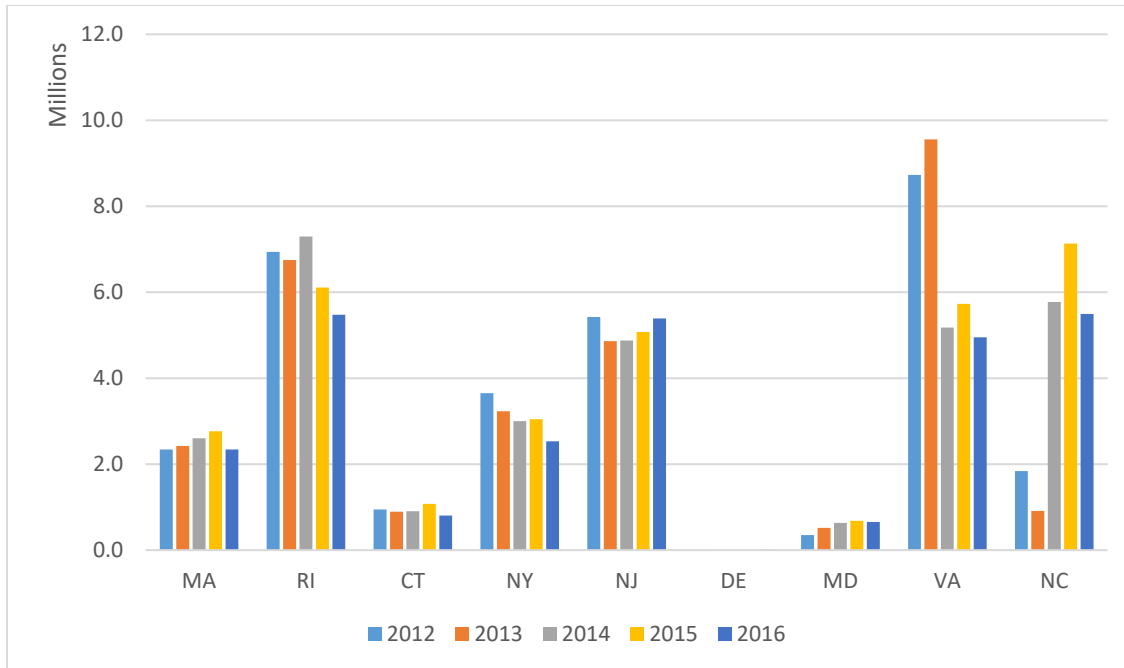


Figure 46: Total ex-vessel revenue (adjusted to 2016 US dollars) for summer flounder landings by state and year, 2012-2016. Source: NMFS dealer data as of May 2017.

6.5.2.2 Ports and Communities

This amendment will impact communities and ports throughout the coastal northeast and mid-Atlantic. A “fishing community” is defined in the MSA as “a community which is substantially dependent on or substantially engaged in the harvesting or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community (16 U.S.C. § 1802(17)).

Table 44 describes the top commercial ports for summer flounder landings from 2007-2016, including all ports accounting for at least 1% of the total ex-vessel revenue for summer flounder reported by commercial dealers over this ten-year time period. Together, these 17 ports accounted for over 80% of the summer flounder ex-vessel value during this time period. The top five ports for summer flounder include Point Judith, RI, Hampton, VA, Newport News, VA, Pt. Pleasant, NJ, and Montauk, NY (Table 44).

A characterization of the major commercial ports for summer flounder is provided in **APPENDIX C**.

Table 44: Top ports for commercial summer flounder landings 2007-2016; showing ports landing >1% of total summer flounder ex-vessel revenue 2007-2016. Source: NMFS dealer data as of May 2017.

PORT	Landings (lb), 2007-2016	% of total landings, 2007-2016	Avg. lb per year (2007-2016)	Value (\$; unadjusted), 2007-2016	% of total value (\$; unadjusted), 2007-2016	Avg. \$ per year (2007-2016)
POINT JUDITH, RI	16,542,993	14.40%	1,654,299	48,815,097	17.96%	4,881,510
HAMPTON, VA	11,361,504	9.89%	1,136,150	21,625,623	7.96%	2,162,562
NEWPORT NEWS, VA	11,399,574	9.92%	1,139,957	20,753,942	7.64%	2,075,394
PT. PLEASANT, NJ	8,075,938	7.03%	807,594	19,853,161	7.31%	1,985,316
MONTAUK, NY	4,897,173	4.26%	489,717	16,457,629	6.06%	1,645,763
BEAUFORT, NC	6,476,496	5.64%	647,650	13,858,843	5.10%	1,385,884
WANCHESE, NC	6,954,845	6.05%	695,485	12,387,082	4.56%	1,238,708
BELFORD, NJ	4,119,069	3.59%	411,907	11,773,253	4.33%	1,177,325
CHINCOTEAGUE, VA	5,511,316	4.80%	551,132	9,866,785	3.63%	986,679
CAPE MAY, NJ	4,976,111	4.33%	497,611	9,673,034	3.56%	967,303
NEW BEDFORD, MA	3,644,411	3.17%	364,441	9,624,704	3.54%	962,470
ENGELHARD, NC	3,873,479	3.37%	387,348	7,252,482	2.67%	725,248
STONINGTON, CT	2,029,304	1.77%	202,930	6,251,765	2.30%	625,177
ORIENTAL, NC	3,369,336	2.93%	336,934	6,038,194	2.22%	603,819
HAMPTON BAYS, NY	1,973,522	1.72%	197,352	5,571,142	2.05%	557,114
OCEAN CITY, MD	1,678,651	1.46%	167,865	4,268,405	1.57%	426,841
LONGBEACH/ BARNEGAT LIGHT, NJ	1,415,733	1.23%	141,573	3,825,376	1.41%	382,538
TOP PORTS SUM	98,299,455	85.58%	9,829,946	227,896,517	83.86%	22,789,652

6.5.2.3 Commercial Dealers

Over 200 federally permitted dealers from Maine through North Carolina bought summer flounder in 2016. More dealers bought summer flounder in New York than in any other state (Table 45). All dealers combined bought approximately \$27.65 million worth of summer flounder in 2016. Figure 47 shows trends in the number of unique federally permitted dealers buying summer flounder from vessels in each state between 2012-2016.

Table 45: Dealers reporting buying summer flounder, by state in 2016. C=Confidential.

State	ME	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC
Number Of Dealers	0	0	32	33	13	48	30	C	7	16	29

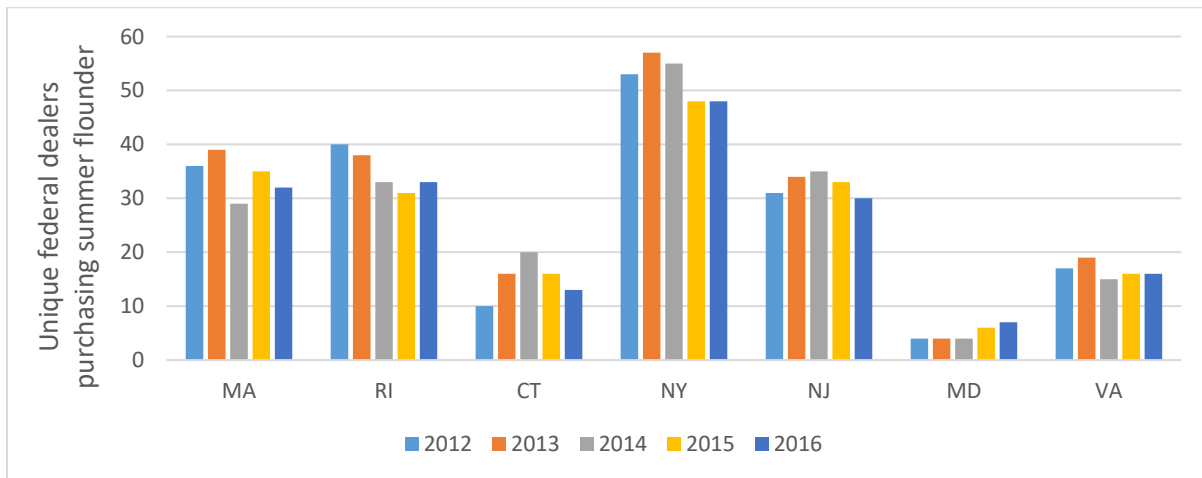


Figure 47: Number of unique federal dealers purchasing summer flounder from commercial vessels, by state and year, 2011-2015. Maine, New Hampshire, and Delaware data are confidential and cannot be displayed. Source: NMFS dealer data as of February 2017.

6.5.2.4 Federal Commercial Moratorium Permits

This section describes the current requirements and status of federal commercial moratorium permits for summer flounder. State level permits are not addressed in this action, however, state permit requirements are provided in **APPENDIX A**.

There is a single limited access federal permit category for the summer flounder commercial fishery: summer flounder moratorium permits. There are no commercial open access permits or incidental catch permits for summer flounder. The original qualification criteria and continued eligibility conditions are described in section 5.1.1.

Permit data indicate that 766 federal commercial permits for summer flounder were issued in 2017.³⁸ In total, there are 940 Moratorium Rights IDs for summer flounder, meaning that 940 is the total number of federal summer flounder moratorium permits that could ever be held from this point forward, based on the qualifying criteria in the FMP. Of those, 208 permits are in CPH as of

³⁸ Source: Dealer data pulled on January 31, 2017.

May 2018. Additional federal permit information was provided by GARFO in May 2018 (Table 46).

Table 46: Federal summer flounder moratorium permit characterization as of May 2018. Data sources: Commercial Fisheries Dealer Reports, GARFO permit database, and the GARFO Moratorium Rights Qualification System (MQRS) database accessed on 05/29/2018.

Summer Flounder Moratorium Rights as of May 2018	Permits	Comments/Explanation
Inactive status (Confirmation of permit history or history retention)	208	These permits have been removed from a vessel.
Active status	732	These permits are eligible to be issued.
Total moratorium rights IDs	940	The current number of federal summer flounder moratorium permits that could be held at a given time, based on the qualifying criteria in the FMP ^a
Summer Flounder Federal Permits (<u>Permit Database</u>)- Permit year 2017 (May 1, 2017 to April 30, 2018)		
Summer Flounder Commercial Moratorium Permits Issued in 2017	766	This is the number of commercial permits that were issued in permit year 2017. Some of these would have been duplicates (i.e., a replacement vessel) or some would have been taken out of History Retention and put on a vessel. Not all of these permits had associated landings in 2017.
Commercial Fisheries <u>Dealer Database</u> Permit/Hull number Counts - Calendar year 2017 (Permit years 2016 and/or 2017)		
Federal summer flounder limited access commercial permitted vessels with dealer-reported summer flounder landings in calendar year 2017	332	These vessels reported commercial summer flounder landings in calendar year 2017.
Number of federal summer flounder charter/party (open access) permitted vessels with dealer-reported commercial summer flounder landings in calendar year 2017	45	These are vessels that have a Federal charter/party permit AND a state commercial license, selling to a federally permitted commercial dealer.
Number of distinct vessels (as identified by dealer-reported hull number) with dealer-reported summer flounder landings in calendar year 2017	1,124	Includes both federally-permitted and state-only permitted vessels.

^a This number has decreased over time due to some vessels not renewing their permits and not being in CPH.

6.5.2.5 State Permit Activity

While this action does not impact state level permits, state permits are required in the state of landing for any federally permitted vessels, so a general characterization of the number of active state permits can help provide a sense of the level of participation in the fishery in each state. The precise number of active vessels and/or fishermen in any given state can be difficult to determine.

State permit information for the past five years was compiled by Commission staff and the Atlantic Coastal Cooperative Statistics Program (ACCSP) and is shown in Table 47. States were asked to provide the number of “active” permits over the past five years, meaning there were summer flounder landings associated with that permit over the last five years. The exact method of pulling “active” permits was not necessarily consistent among states. Note that some states permit a vessel, while some states permit an individual. State permit data was provided by state marine fisheries agencies to Commission staff, and is provided along with ACCSP database information for known fishermen with summer flounder landings in each year 2012-2016.

Table 47: ACCSP summer flounder state commercial permit summary; 2012-2016. Delaware and Maine not provided for confidentiality reasons.

State	State Provided Permits ^a		Number of Known Fishermen in ACCSP Summer Flounder Landings ^e				
	Total Count	Active Count ^b	2016	2015	2014	2013	2012
MA	699	274	210	226	203	230	265
RI	1192	546	522	482	486	538	540
CT	N/A	N/A	67	70	68	64	62
NY ^c	491	416	191	199	222	225	234
NJ	177	89	68	61	68	60	51
MD	N/A	N/A	26	27	45	43	47
VA	175	175	114	117	160	47	58
NC ^d	166	138	251	201	222	191	186

^a “State-provided permits” indicates counts of total and active state commercial summer flounder permits that were provided to Commission staff by individual states. Maryland and Connecticut data had not been provided at time of this report. ^b Provided by individual states; methods may not be consistent. Some states permit a vessel; some states permit individuals. ^c “Active count” in the table above indicates active during the period of 2012-2016, but not necessarily active in each of those years. New York provided an additional breakdown of active permits over each individual year for 2012-2016:

Year	NY Active Count
2012	255
2013	242
2014	251
2015	234
2016	203

^d Some North Carolina landings by year would have been from non-North Carolina permit holders, leading to the “known fishermen” counts by year being higher than the number of “active” NC permits. ^e “Known fishermen” counts are derived from ACCSP database fisherman ID. “Unknown” fishermen not included. Among identified fishermen (people) in ACCSP Summer Flounder Landings for the period of 2012-2016, approximately 93% had a single fishermen state permit, 6% had two fishermen state permits, and less than 0.5% had three or more fishermen state permits. This includes state permits only, as Federal permits are issued to vessels. Approximately 95% landed in a single state and the remaining 5% landed in two to four states. These percentages are similar in each year throughout the 5-year period.

7.0 ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES

This section analyzes the impacts to the affected environment of the alternatives described in section 5.0. These alternatives contain options that could 1) implement requalifying criteria for federal commercial moratorium permits, 2) modify the allocation of commercial summer flounder quota, and 3) add framework provisions to the FMP that would allow for commercial landings flexibility policies for summer flounder to be developed through later framework actions.

Environmental impacts are analyzed with respect to five valued ecosystem components (VECs):

6. The **managed resources**, including the managed species potentially affected by the measures under consideration (sections 7.1.1, 7.2.1, and 7.3.1);
7. **Non-target species**, including the primary species or species groups that interact with summer flounder, summer flounder habitat, and/or commercial summer flounder fishing gear (sections 7.1.2, 7.2.2, and 7.3.2);
8. The **physical environment and habitat**, including Essential Fish Habitat (EFH; sections 7.1.3, 7.2.3, and 7.3.3);
9. **Protected resources**, including ESA-listed and MMPA-protected large and small cetaceans, pinnipeds, sea turtles, fish, and critical habitat occurring in the affected area (sections 7.1.4, 7.2.4, and 7.3.4);
10. The **human environment**, including socioeconomic aspects of the fisheries (especially commercial fisheries) targeting summer flounder and the communities associated with those fisheries, as well as other human communities with an interest in summer flounder conservation and management (sections 7.1.5, 7.2.5, and 7.3.5).

In sections 7.1 through 7.3, the impacts are described both in terms of their direction (negative, positive, or no impact) and their magnitude (slight, moderate, or high). Table 48 summarizes the main guidelines used for each VEC to determine the magnitude and direction of the impacts described in this section.

When considering impacts on each VEC, the alternatives are compared to the current condition of the VEC. The alternatives are also compared to each other. The no action alternative describes what would happen if no action were taken. For all options considered in this document, the "no action" alternative would have the same outcome as *status quo* management, therefore, these alternatives are at times described as "no action/*status quo*."

The recent conditions of the VECs include the biological conditions of the target stock, non-target stocks, and protected species over the most recent five years (sections 6.1, 6.2, and 6.4). They also include the fishing practices and levels of effort and landings in the commercial summer flounder fishery over the most recent five years, as well as the economic characteristics of the fisheries over the most recent three to five years (depending on the dataset; section 6.5). The recent conditions of the VECs also include recent levels of habitat availability and quality (section 6.3). The current condition of each VEC is described in Table 49.

The alternatives are not compared to a theoretical condition where the fisheries are not operating. These fisheries have occurred for many decades and are expected to continue into the foreseeable future. The nature and extent of the management programs for these fisheries have been examined in detail in past EAs and EISs prepared for previously implemented management actions under the Summer Flounder, Scup, and Black Sea Bass FMP, and are further described in this document.

When considering overall impacts on each VEC, impacts resulting from management changes in the commercial sector of the summer flounder fishery are the focus of the discussion, given that no recreational management modifications are proposed in this action. There may be indirect impacts to recreational communities within the human environment that could occur from changes in commercial management, and those are also described where relevant.

In general, alternatives which may result in overfishing or an overfished status for target and non-target species may have negative biological impacts for those species, compared to the current condition of the VEC. Conversely, alternatives which may result in a decrease in fishing effort, resulting in ending overfishing or rebuilding to the biomass target, may result in positive impacts for those species by resulting in a decrease in fishing mortality (Table 48).

For the physical environment and habitat, alternatives that improve the quality or quantity of habitat or allow for recovery are expected to have positive impacts. Alternatives that degrade the quality or quantity, or increase disturbance of habitat are expected to have negative impacts (Table 48). The proposed actions in this document only impact the commercial summer flounder fishery; thus, the evaluation of habitat impacts is focused on how the interaction of commercial gear types and vessels may change with each alternative. Bottom trawls are the predominant commercial gear type used to harvest summer flounder and typically account for 90-97% of all landings (see section 6.3.3). Alternatives that may result in a reduction in fishing effort or fleet capacity may decrease the time that fishing gear is in the water, thus reducing the potential for interactions between fishing gear and habitat; however, most habitat areas where summer flounder are fished have been heavily fished by multiple fishing fleets over many decades and may not see a measurable improvement in their condition in response to shifts in effort in a single fishery (Table 48).

For protected species, consideration is given to both ESA-listed species and MMPA-protected species. ESA-listed species include populations of fish, marine mammals, or turtles at risk of extinction (endangered) or endangerment (threatened). For endangered or threatened species, any action that results in interactions with or take of ESA-listed resources is expected to have negative impacts, including actions that reduce interactions. Actions expected to result in positive impacts on ESA-listed species include only those that contain specific measures to ensure no interactions with protected species (i.e., no take). By definition, all species listed under the ESA are in poor condition and any take has the potential to negatively impact that species' recovery. Under the MMPA, the stock condition of each protected species varies, but all are in need of protection.

For marine mammal stocks/species that have their potential biological removal (PBR) level reached or exceeded, negative impacts would be expected from any alternative that has the potential to interact with these species or stocks. For species that are at more sustainable levels (i.e., PBR levels have not been exceeded), actions not expected to change fishing behavior or effort such that interaction risks increase relative to what has been in the fishery previously, may have positive impacts by maintaining takes below the PBR level and approaching the Zero Mortality Rate Goal (Table 48). Thus, the overall impacts on the protected resources VEC for each alternative take into account impacts on ESA-listed species, impacts on marine mammal stocks in good condition (i.e., PBR level has not been exceeded), and marine mammal stocks that have exceeded or are in danger of exceeding their PBR level (Table 48).

Socioeconomic impacts are considered primarily in relation to potential changes in landings and prices, and by extension, revenues, compared to the current fishery conditions. Alternatives which could lead to increased availability of target species and/or an increase in catch per unit effort

(CPUE) could lead to increased landings for particular communities or for the fishery as a whole. Alternatives which could result in an increase in landings are generally considered to have positive socioeconomic impacts because they could result in increased revenues (for fishing businesses as well as shoreside businesses); however, if an increase in landings leads to a decrease in price or a decrease in SSB for any of the landed species, then negative socioeconomic impacts could occur (Table 48). In addition, socioeconomic impacts can be considered in terms of other economic metrics and effects on the social wellbeing of fishery participants and communities, including factors like effect on community resilience, jobs, and employee income.

The expected impacts to each VEC are derived from both consideration of the current condition of the VEC and the expected changes in the characteristics and prosecution of the fishery (including but not limited to changes in overall effort, the spatial and seasonal distribution of effort, and fishing techniques) under each of the alternatives. It is not possible to quantify with confidence how these factors will change under each alternative; therefore, expected changes are estimated and/or described qualitatively.

Table 48 also describes the qualifiers that are used to describe the magnitude and direction of impacts throughout this section. Impacts may range from negligible or no impact to significant impacts, and expected impacts may be positive, negative, or mixed. Impacts that are associated with a higher degree of uncertainty are qualified as "likely" or "uncertain."

Table 48: General definitions for impacts and qualifiers relative to resource condition (i.e., baselines) summarized in Table 49 below.

General Definitions				
VEC	Resource Condition	Impact of Action		
		Positive (+)	Negative (-)	No Impact (0)
Target and non-target Species	Overfished status defined by the MSA	Alternatives that would maintain or are projected to result in a stock status above an overfished condition*	Alternatives that would maintain or are projected to result in a stock status below an overfished condition*	Alternatives that do not impact stock / populations
ESA-listed protected species (endangered or threatened)	Populations at risk of extinction (endangered) or endangerment (threatened)	Alternatives that contain specific measures to ensure no interactions with protected species (i.e., no take)	Alternatives that result in interactions/take of listed species, including actions that reduce interactions	Alternatives that do not impact ESA listed species
MMPA protected species (not also ESA listed)	Stock health may vary but populations remain impacted	Alternatives that maintain takes below PBR and approaching the Zero Mortality Rate Goal	Alternatives that result in interactions with/take of marine mammals that could result in takes above PBR	Alternatives that do not impact MMPA protected species
Physical environment / habitat / EFH	Many habitats degraded from historical effort and slow recovery time (see condition of the resources table for details)	Alternatives that improve the quality or quantity of habitat or allow for recovery	Alternatives that degrade the quality/quantity or increase disturbance of habitat	Alternatives that do not impact habitat quality
Human communities (socioeconomic)	Highly variable but generally stable in recent years (see condition of the resources table for details)	Alternatives that increase revenue and social well-being of fishermen and/or communities	Alternatives that decrease revenue and social well-being of fishermen and/or communities	Alternatives that do not impact revenue and social well-being of fishermen and/or communities
		Impact Qualifiers		
A range of impact qualifiers is used to indicate any existing uncertainty	Negligible	To such a small degree to be indistinguishable from no impact		
	Slight (sl), as in slight positive or slight negative	To a lesser degree / minor		
	Moderate (M) positive or negative	To an average degree (i.e., more than “slight”, but not “high”)		
	High (H), as in high positive or high negative	To a substantial degree (not significant unless stated)		
	Significant (in the case of an EIS)	Affecting the resource condition to a great degree, see 40 CFR 1508.27.		
	Likely	Some degree of uncertainty associated with the impact		
*Actions that will substantially increase or decrease stock size, but do not change a stock status may have different impacts depending on the particular action and stock. Meaningful differences between alternatives may be illustrated by using another resource attribute aside from the MSA status, but this must be justified within the impact analysis.				

Table 49: Baseline conditions of VECs considered in this action, as summarized in Section 6.

VEC		Baseline Condition	
		Status/Trends, Overfishing?	Status/Trends, Overfished?
Target stock (section 6.1)	Summer flounder	Yes	No
Non-target species (principal species listed in section 6.2)	Black Sea Bass	No	No
	Scup	No	No
	Northeast skate complex	No	No, except thorny skate
	Spiny dogfish	No	No
	Northern sea robin	Unknown	Unknown
Habitat (section 6.3)		Commercial fishing impacts are complex and variable and typically adverse; Non-fishing activities had historically negative but site-specific effects on habitat quality.	
Protected resources (section 6.4)	Sea turtles	Leatherback and Kemp’s ridley sea turtles are classified as endangered under the ESA; loggerhead (NW Atlantic DPS) and green (North Atlantic DPS) sea turtles are classified as threatened.	
	Fish	Atlantic salmon (Gul of Maine DPS), shortnose sturgeon, and the New York Bight, Chesapeake, Carolina, and South Atlantic DPSs of Atlantic sturgeon are classified as endangered under the ESA; the Atlantic sturgeon Gulf of Maine DPS is listed as threatened; cusk are a candidate species	
	Large whales	All large whales in the Northwest Atlantic are protected under the MMPA. North Atlantic right, fin, blue, sei, and sperm whales are also listed as endangered under the ESA. Pursuant to section 118 of the MMPA, the Large Whale Take Reduction Plan was implemented to reduce humpback, North Atlantic right, and fin whale entanglement in vertical lines associated with fixed fishing gear (sink gillnet and trap/pot) and sinking groundlines.	
	Small cetaceans	Pilot whales, dolphins, and harbor porpoise are all protected under the MMPA. Pursuant to section 118 of the MMPA, the HPTRP and BDTRP were implemented to reduce bycatch of harbor porpoise and bottlenose dolphin stocks, respectively, in gillnet gear.	
	Pinnipeds	Gray, harbor, hooded, and harp seals are protected under the MMPA.	
Human communities (section 6.5)		Summer flounder supports large commercial and recreational fisheries; human communities impacted by the commercial fishery are relevant in this action. Over the past five years (2012-2016), the commercial fishery has averaged \$28 million ex-vessel value per year (in 2016 dollars). Approximately 789 commercial moratorium permits for summer flounder were issued in 2016, with 344 reporting summer flounder landings. 19 ports from MA through NC have averaged over 100,000 lb of summer flounder landings annually from 2012-2016. Over 200 federally-permitted dealers from Maine through North Carolina purchased summer flounder in 2016.	

7.1 IMPACTS OF ALTERNATIVE SET 1: FEDERAL MORATORIUM PERMIT REQUALIFICATION

This alternative set contains options for requalification criteria for federal commercial moratorium permits for summer flounder, in the form of various combinations of landings thresholds and time periods over which those landings thresholds must have been achieved. The permit requalification alternatives are fully described in section 5.1 and briefly summarized here.

Alternative 1A (no action/status quo) would make no changes to the current commercial moratorium permit eligibility requirements established in 1993. To be eligible for a moratorium permit, a vessel must have been issued a moratorium permit in the previous year, or be replacing a vessel that was issued a moratorium permit after the owner retires the vessel from the fishery. All moratorium permits must be reissued on an annual basis by the last day of the fishing year for which the permit is required, unless the permit is in CPH.

Alternative 1B and sub-options (requalification of existing federal moratorium permits) presents various options for revising the qualifying criteria for summer flounder moratorium permits. All sub-options under this alternative, as described below, would evaluate requalification only from the existing pool of summer flounder moratorium permit holders and would not allow new entrants to obtain a permit based on the qualifying criteria. The qualifying criteria are associated with the summer flounder moratorium right ID (MRI) number maintained by GARFO.

Under all alternatives and sub-alternatives, overall annual summer flounder landings will still be constrained by the annual commercial quotas, which should remain the primary driving factor for overall fishery effort in a given year. As described below, requalification of moratorium permits theoretically could result in a redistribution of effort among a different pool of vessels. However, it appears that most MRIs that would be eliminated under each sub-alternative of 1B are associated with little to no activity for summer flounder in recent years; therefore, the impacts of reducing permit capacity under alternative 1B may be minimal, as described below.

Because this alternative set would not substantially modify overall effort, but considers how fishery effort will be distributed among participants, the impacts of this alternative set are primarily socioeconomic, both on individual permit holders and more broadly on fishing communities, as described below in section 7.1.5.

7.1.1 Impacts to the Target Stock (Summer Flounder)

7.1.1.1 *Alternative 1A: No Action/Status Quo*

This alternative would take no action to revise federal permit qualifications and would result in moderate positive impacts to the summer flounder stock, since the fishery would continue to be managed to prevent overfishing and to prevent the stock from becoming overfished. The summer flounder stock will continue to be managed under ACLs and AMs as required by the MSA, with the commercial fishery managed under an annual commercial quota derived from the commercial ACL and based on the best scientific information available.

When compared to alternative 1B and its sub-alternatives, alternative 1A is expected to have a similar magnitude of positive impacts. Neither of these alternatives are expected to change the overall level of effort in the fishery, which will continue to be constrained by ACLs and the annual commercial quota. The slight changes in vessel permit access under any 1B sub-alternative is

expected to result in very minor practical impacts to the fishery, as described below. Therefore, the positive impacts to summer flounder from both alternatives are not expected to meaningfully differ in their magnitude.

7.1.1.2 Alternative 1B: Requalification of Existing Federal Moratorium Permits

Similar to alternative 1A, all-sub-alternatives under alternative 1B would not be expected to result in overall changes in fishing effort for summer flounder. The fishery will still be constrained by annual catch and landings limits, therefore, overall fishery effort in a given year will remain driven by these limits. Summer flounder is a high demand species and it is likely that utilization rates will remain high and annual quotas will continue to be reached every year. Therefore, a reduction in permit capacity under alternative 1B is not likely to impact overall effort each year but will impact the pool of vessels participating in the fishery.

Summer flounder removals will continue to be limited by annual catch limits, which will have positive impacts on the stock as the annual catch limits are based on the best available science and are intended to prevent overfishing.

Changes in the distribution of effort by vessel are not expected to have a meaningful impact on the summer flounder stock, especially given that most eliminated permits under all sub-alternatives are associated with little to no summer flounder landings in recent years. Between August 2009 and July 2014, summer flounder commercial landings associated with each group of eliminated MRIs were minimal for most sub-alternatives and non-existent for alternatives 1B-2 and 1B-4. These landings represented between 0% and 0.32% of coastwide summer flounder landings over the same time period (Table 50). Given this information, it is likely that most eliminated permits under each sub-alternative are not actively participating in the summer flounder fishery. Thus, changes in distribution of effort amongst participants under any of the sub-alternatives is likely to have minimal or no impacts on summer flounder landings, and would not be expected to influence stock status.

Overall incidental catch levels of summer flounder catch for vessels targeting other species are likely to be unaffected. While in theory, a slight increase in summer flounder discards from non-requalifying vessels is possible if they are no longer permitted to land summer flounder, it does not appear that most of the eliminated vessels under various sub-alternatives are landing much, if any, summer flounder in recent years. Thus, there should not be a substantial conversion from landings into discards, since landings among these vessels are currently very low to non-existent. In addition, the total dead catch (i.e., total removals from the fishery) will still be accounted for and constrained by the annual catch limit.

In theory, a reduction in the number of moratorium permits for summer flounder could result in a reduction in management uncertainty (in the near-term or long-term) based on a reduction in the potential for an influx of latent effort into the fishery. Such an influx is difficult to predict, but if it occurred could cause managers difficulty in constraining catch to the ACL. By reducing the total permit capacity in the summer flounder fishery, some of this management uncertainty is reduced, resulting in possible indirect slight positive impacts to the resource due to a better ability to control catch and landings.

Table 50: Recent landings for eliminated MRIs associated with sub-alternatives under Alternative 1B, between August 1, 2009 and July 31, 2014. Landings thresholds under each sub-alternative refer to commercial landings of summer flounder associated with each MRI.

Sub-alternative under 1B	Time Period	Landings Threshold	# MRIs Eliminated (%)	Combined landings (lb) from eliminated MRIs, 8/1/09-7/31/14	% of coastwide summer flounder landings, 8/1/09-7/31/14
1B-1	8/1/09-7/31/14 (5 yrs)	≥1,000 pounds cumulative	516 (55%)	24,529	0.04%
1B-2	8/1/09-7/31/14 (5 yrs)	At least 1 pound in any year	448 (48%)	0	0.00%
1B-3	8/1/04-7/31/14 (10 yrs)	≥1,000 pounds cumulative	389 (41%)	5,713	0.01%
1B-4	8/1/04-7/31/14 (10 yrs)	At least 1 pound in any year	306 (33%)	0	0.00%
1B-5	8/1/99-7/31/14 (15 yrs)	≥1,000 pounds cumulative	295 (31%)	2,896	0.01%
1B-6	8/1/94-7/31/14 (20 yrs)	At least 1 pound in 20% of years (i.e., in at least 4 years over this 20-year period)	271 (29%)	181,302	0.32%
1B-7	8/1/94-7/31/14 (20 yrs)	≥1,000 pounds cumulative	233 (25%)	2,414	0.00%

Compared to alternative 1A, all of the sub-alternatives under 1B are likely to have a similar magnitude of moderate positive impacts to the summer flounder stock. All alternatives maintain the current management to the annual catch and landings limits, which is designed to prevent overfishing and prevent the stock from becoming overfished. Maintaining the current pool of participants (alternative 1A) and reducing the number of current permits to eliminate those that are inactive or very low activity will not meaningfully change the status of the summer flounder resource. Similarly, differences among sub-alternatives for alternative 1B are unlikely to vary in their magnitude of positive impacts to the summer flounder resource. While the number of MRIs eliminated under these sub-options varies (ranging from 25% to 55% of existing MRIs), landings from these MRIs in recent years consist of less than a third of one percent of coastwide landings at most.

7.1.2 Impacts to Non-Target Species

Primary non-target species identified for the commercial summer flounder trawl fishery, as described in section 6.2, are several species of skate, spiny dogfish, Northern sea robin, black sea bass, and scup. Non-target species could be affected by the alternatives for moratorium permit requalification if these alternatives were expected to change the level of effort or the prosecution of the fishery in a manner that would impact the interaction rates with non-target species. However, this is unlikely to be the case for alternatives 1A and 1B in this document. As described above in

section 7.1.1, the permit requalification alternatives are not expected to change the overall level of effort for summer flounder. In addition, the alternatives in this document are not expected to change how the fishery is currently prosecuted, including the timing, areas fished, or gear types used. Impacts to non-target species from all federal permit alternatives are thus expected to be minimal and will contribute to maintaining the current stock status of non-target species, as described below.

7.1.2.1 Alternative 1A: No Action/Status Quo

As described in section 7.1.1, alternative 1A would make no changes to the current pool of commercial moratorium rights for summer flounder. As with impacts to summer flounder, this alternative would result in moderate positive impacts to non-target species that currently have a positive stock condition, since this alternative would contribute to maintaining that positive stock status.

The stock conditions of non-target species relevant to this action are described in Table 49. With the exception of thorny skate (overfished status) and Northern sea robin (status unknown), none of the non-target species are experiencing overfishing or are currently overfished. Most of these fisheries (with the exception of sea robin) are currently managed by the MAFMC or NEFMC. These fisheries would continue to be managed to prevent overfishing and to prevent the stock from becoming overfished under the requirements of the MSA, based on the best scientific information available. Incidental dead catch of MSA managed species is accounted for through the setting and monitoring of ACLs and AMs.

Alternative 1A would result in no changes in effort, and no changes in the prosecution of the fishery. Thus, impacts to non-target species from this alternative are expected to be overall moderate positive as they would maintain the positive stock status of most relevant non-target species. For species with unknown or overfished (thorny skate) stock status, alternative 1A would be expected to slight negative to no impacts, as it would be expected to maintain the current overfished or unknown stock status for these species. Given the condition of most non-target species, overall, alternative 1A would result in moderate positive impacts for non-target species.

Compared to alternative 1B and sub-alternatives, alternative 1A is likely to have very similar magnitude of moderate positive impacts, because the overall fishing effort and the prosecution of the fishery are not expected to vary in a meaningful way between these alternatives.

7.1.2.2 Alternative 1B: Requalification of Existing Federal Moratorium Permits

As described in section 7.1 for impacts to summer flounder, alternative 1B and its sub-alternatives would not be expected to affect the overall amount of effort for summer flounder since catch and landings will still be constrained by annual catch and landings limits. In addition, most of the eliminated MRIs under all 1B sub-alternatives are landing little or no summer flounder in recent years (Table 50), meaning that actual changes in the distribution of effort as the result of alternative 1B are expected to be negligible.

Thus, the impacts of all sub-alternatives under alternative 1B are expected to be similar to each other and to impacts of alternative 1A. Moderate positive impacts are expected overall, since alternative 1B and sub-options would maintain the positive stock status of most non-target species relevant to this action. For overfished or unknown status species (thorny skate and Northern sea robin, respectively), this action is not expected to meaningfully contribute to a change in stock status.

7.1.3 Impacts to Physical Habitat and EFH

7.1.3.1 Alternative 1A: No Action/Status Quo

Alternative 1A is not expected to alter the prosecution of the fishery in any way that would directly either improve or degrade the quality of habitat. The summer flounder fisheries operate in areas that have been fished for many years, not only for summer flounder but for a variety of species, with a variety of gear types, and this is not expected to change under this alternative, which simply maintains the number of eligible moratorium permits at their current level and is not expected to alter overall effort levels, times and areas fished, or gear types used in the fishery. However, this alternative does allow continued permitting of summer flounder trawl vessels which are known to interact with habitat through their operation. As described in Table 48, alternatives that allow for recovery of habitat quality would result in positive impacts to the physical environment and habitat, meaning that actions that prevent recovery may result in indirect negative impacts to habitat.

As such, while alternative 1A is not expected to directly alter the level of habitat quality either positively or negatively, this alternative may have slight negative indirect impacts to habitat and EFH by continuing to prevent degraded habitats from recovering (i.e., this alternative will continue the current operating conditions which do not allow for recovery of degraded habitats due to continued fishing in those areas).

Alternative 1A is expected to have the same impacts (indirect slight negative impacts) as alternative 1B, as described below.

7.1.3.2 Alternative 1B: Requalification of Existing Federal Moratorium Permits

As described in the sections above, as with alternative 1A, none of the sub-alternatives under 1B are expected to result in changes in overall effort in the fishery. In addition, these sub-alternatives are not expected to have meaningful impacts on the distribution of effort in time and space due to the very low summer flounder effort observed in recent years for eliminated MRIs under each sub-alternative (Table 50). The current footprint of the fishery will continue to be fished by remaining summer flounder vessels and other fishing vessels. Like alternative 1A, sub-alternatives under 1B would result in indirect slight negative impacts to habitat, as they contribute to maintaining fishery impacts that prevent the recovery of degraded habitats.

Alternative 1B is expected to result in the same magnitude of indirect slight negative impacts to habitat as alternative 1A, as none of the alternatives for federal permit requalification are expected to change the overall degree of effort or the prosecution of the fishery in terms of areas fished or gear types used. Both alternatives 1A and 1B will result in a similar or identical footprint of fishing, and overall effort will remain tied to annual catch and landings limits.

7.1.4 Impacts to Protected Resources

As described above in the introduction to section 7, the impacts on protected resources may vary between ESA-listed and MMPA-protected species. For ESA-listed species, any action that could result in take of ESA-listed species is expected to have negative impacts, including actions that reduce interactions. Under the MMPA, the impacts of the proposed alternatives would vary based on the stock condition of each protected species and the potential for each alternative to impact fishing effort. For marine mammal stocks/species that have their PBR level reached or exceeded, negative impacts would be expected from any alternative that has the potential to interact with these species or stocks. For species that are at more sustainable levels (i.e., PBR levels have not

been exceeded), any action not expected to change fishing behavior or effort such that interaction risks increase relative to what has been seen in the fishery previously, may have positive impacts by maintaining takes below the PBR level and approaching the Zero Mortality Rate Goal (Table 48). Taking the latter into consideration, the overall impacts on the protected resources VEC for each alternative take into account impacts on ESA-listed species, impacts on marine mammal stocks in good condition (i.e., PBR level has not been exceeded), and marine mammal stocks that have reached or exceeded their PBR level.

Overall, the federal permit requalification alternatives could have potential impacts on protected resources ranging from slight positive to slight negative, with slight positive to slight negative impacts likely on non-ESA listed marine mammals, and slight negative impacts likely for ESA-listed species. Because overall effort and the timing and location of fishery operation is not expected to vary between any of these alternatives, alternative 1A and all sub-alternatives under alternative 1B would have similar magnitudes of slight positive to slight negative impacts on protected resources.

7.1.4.1 *Alternative 1A: No Action/Status Quo*

MMPA (Non-ESA Listed) Species Impacts

The summer flounder fishery overlaps with the distribution of non-ESA listed species of marine mammals (cetaceans and pinnipeds). As a result, marine mammal interactions with fishing gear used to prosecute the commercial fishery are possible (i.e., otter trawl gear, see section 6.4). Ascertaining the risk of an interaction and the resultant potential impacts on marine mammals is uncertain because quantitative analyses have not been performed and data are limited (section 6.4). However, we have considered, the most recent (2010-2014) information on marine mammal interactions with commercial fisheries (Hayes *et al.* 2017; https://www.nefsc.noaa.gov/fsb/take_reports/nefop.html).

Aside from pilot whales and several stocks of bottlenose dolphin, there has been no indication that takes of non-ESA listed species of marine mammals in commercial fisheries have gone beyond levels which would result in the inability of each species population to sustain itself. Specifically, aside from pilot whales and several stocks of bottlenose dolphin, the PBR level has not been exceeded for any of the non-ESA listed marine mammal species identified in section 6.4 (Hayes *et al.* 2017). Although pilot whales and several stocks of bottlenose dolphin have experienced levels of take that resulted in the exceedance of each species PBR level, take reduction strategies and/or plans have been implemented to reduce bycatch in the fisheries affecting these species (Atlantic Trawl Gear Take Reduction Strategy, Pelagic Longline Take Reduction Plan effective May 19, 2009 (74 FR 23349); Bottlenose Dolphin Take Reduction Plan, effective April 26, 2006 (71 FR 24776)). These efforts are still in place and are continuing to assist in decreasing bycatch levels for these species. Although NEFOP observer reports³⁹ and the most recent five years of information presented in Hayes *et al.* (2017) are a collective representation of commercial fisheries interactions with non-ESA listed species of marine mammals, and do not address the effects of the summer flounder fishery specifically, the information does demonstrate that thus far, operation of any fishery has not resulted in a collective level of take that threatens the continued existence of non-ESA listed marine mammal populations, aside from those species (pilot whales and bottlenose dolphin stocks) noted above.

³⁹ https://www.nefsc.noaa.gov/fsb/take_reports/nefop.html.

Taking into consideration the above information, and the fact that there are non-listed marine mammal stocks/species whose populations may or may not be at optimum sustainable levels, impacts of alternative 1A on non-ESA listed species are likely to range from slight negative to slight positive. As noted above, there are some marine mammal stocks/species that are experiencing levels of interactions that have resulted in exceedance of their PBR levels. These stocks/populations are not at an optimum sustainable level and therefore, the continued existence of these stocks/species is at risk. As a result, any potential for an interaction is a detriment to the species/stocks ability to recover from this condition. As interactions with non-ESA listed marine mammals are possible under alternative 1A, for these species/stocks with a current sub-optimal stock condition, alternative 1A is likely to result in slight negative impacts to these species.

Alternatively, there are also many non-ESA listed marine mammals that, even with continued fishery interactions, are maintaining an optimum sustainable level (i.e., PBR levels have not been exceeded) over the last several years. For these stocks/species, it appears that the fishery management measures that have been in place over this timeframe have resulted in levels of effort that equate to interaction levels that are not expected to impair the stocks/species ability to remain at an optimum sustainable level. These fishery management measures, therefore, have resulted in indirect slight positive impacts to these non-ESA listed marine mammal species/stocks. Should future fishery management actions maintain similar operating condition as they have over the past several years, it is expected that these slight positive impacts would remain. Thus, given that alternative 1A is not expected to change fishing effort relative to the *status quo*, the impacts of alternative 1A on these non-ESA listed species of marine mammals with positive stock conditions are expected to be slight positive (i.e., continuation of current operating conditions is not expected to result in exceedance of any of these stocks/species PBR level).

Based on this information, overall alternative 1A is expected to have slight negative to slight positive impacts on non-ESA listed species of marine mammals.

ESA Listed Species Impacts

The summer flounder commercial fishery is prosecuted with bottom trawl gear. As provided in section 6.4, ESA listed species of sea turtles, Atlantic sturgeon, and Atlantic salmon are vulnerable to interactions with this gear type, with interactions often resulting in the serious injury or mortality to the species. Based on this, the summer flounder fishery is likely to result in some level some level of negative impacts to ESA listed species. Interaction risks with protected species are strongly associated with amount, time, and location of gear in the water (with vulnerability of an interaction increasing with increases in of any or all of these factors). Because alternative 1A simply maintains the current total number of possible moratorium permits in the fishery and will not impact overall effort in a given year, this alternative is not expected to increase or decrease interaction rates with ESA listed species. However, because alternative 1A would maintain access to the fishery and maintain the possibility of interactions with ESA listed species, slight negative impacts are expected to result from this alternative.

Overall Impacts

Overall, alternative 1A is expected to have slight negative to slight positive impacts on protected resources, with slight negative to slight positive impacts likely on non-ESA listed marine mammals and slight negative impacts likely for ESA-listed species.

Compared to alternative 1B, alternative 1A is likely to have similar magnitude and direction of impacts, assuming that other conditions impacting participation in the fishery remain similar to current conditions. Because all sub-alternatives under 1B would eliminate mostly vessels with low or no activity for summer flounder, the near-term differences between alternatives in terms of the prosecution of the summer flounder fishery are expected to be negligible. However, sub-alternatives under 1B, as described below, do have the possibility of preventing future latent effort from re-entering the fishery. Relative to alternative 1A, this could result in slightly more positive impacts to protected resources, as this could reduce the possibility of increased interactions with marine mammals and ESA listed species resulting from a re-entry of latent effort to the fishery.

7.1.4.2 Alternative 1B: Requalification of Existing Federal Moratorium Permits

Impacts of alternative 1B, and all of its sub-alternatives, are expected to be similar in direction and magnitude to the impacts of alternative 1A, given that overall effort and the manner in which the fishery is prosecuted are not expected to change under any of these alternatives. As described above, the MRIs that would be eliminated under each sub-alternative under 1B are associated with little to no landings of summer flounder in recent years, meaning that any of the sub-alternatives under 1B would have little or no practical impact as far as modifying the distribution of participation and effort in the fishery. As with alternative 1A, slight negative to slight positive impacts are possible for non-ESA listed species of marine mammals. Slight positive impacts are expected for those species where takes have not exceeded that stock's PBR, and slight negative impacts are expected for those species with less positive stock conditions. For ESA listed species, any action resulting in takes is likely to have negative impacts; however, given that this action is not expected to substantially change the prosecution of the fishery, these negative impacts are expected to be minor relative to the current conditions.

As mentioned above, it's possible that alternative 1B and its sub-alternatives would result in a reduced risk of latent effort re-entering the fishery in future years, which could possibly increase the rates of interactions with protected species. This is highly uncertain and difficult to predict, but considering this possibility, alternative 1B would arguably have very slightly lower negative impacts to protected resources when compared to alternative 1A due to this reduced risk.

The re-entry of latent effort is difficult to predict, and the sub-alternatives under 1B may result in different combinations of vessels being eliminated. Because all 1B sub-alternatives eliminate vessels with little or no recent summer flounder activity, and because conditions that would theoretically cause latent permits to re-enter the fishery are highly uncertain and are likely to vary based on individual businesses considerations, it is difficult to draw meaningful conclusions about the differences in the magnitude of impacts of each sub-alternative on protected resources. For example, it is impossible to demonstrate that alternative 1B-1 (eliminating 516 MRIs) will have meaningfully different impacts from alternative 1B-3 (eliminating 389 MRIs; Table 50). However, in general, sub-alternatives eliminating more MRIs will theoretically have a greater impact on reductions in permit capacity, meaning a greater reduction in the potential for future re-entry of latent effort. In that sense, the sub-alternatives under alternative 1B would have impacts on protected species that may be very slightly more positive for alternative 1B-1 (eliminates the most permits), followed by alternative 1B-2, and so on in numerical order through alternative 1B-7 (which eliminates the least amount of permits).

7.1.5 Impacts to Human Communities

Alternatives for federal moratorium permit qualifications may have an impact on human communities by impacting permit holders (both those who requalify and those who do not under various alternatives), as well as their fishing communities and ports, including associated fishing businesses.

As described above, overall summer flounder landings will still be constrained by the annual commercial quotas, which should remain the primary driving factor for overall fishery effort in a given year. Requalification of moratorium permits under alternative 1B would result in a smaller pool of vessels eligible to participate in the fishery. However, most eliminated MRIs under each sub-alternative under 1B are associated with little (or no) activity for summer flounder in recent years; therefore, the overall near-term impacts of reducing permit capacity under alternative 1B are likely to be small, as described below.

7.1.5.1 *Alternative 1A: No Action/Status Quo*

The no action/*status quo* alternative 1A would make no changes to the current pool of eligible vessels or permitting requirements. This alternative is associated with the highest number of summer flounder permits remaining eligible (940 MRIs currently exist for summer flounder, meaning 940 summer flounder moratorium permits are currently eligible to be issued). The magnitude and direction of impacts of alternative 1A to individual vessels depends on the potential for latent effort to re-enter the fishery, which is difficult to predict; thus, the impacts are presented as a range of possible outcomes.

If conditions remain similar to the past few years in terms of fishery participation (which can be influenced by factors such as overall quota levels, market factors, restrictions in other fisheries, or broader economic factors, among other things) then the distribution of effort among vessels will remain similar to the current distribution. In this case, alternative 1A would have minimal impacts (positive or negative) to human communities, as this alternative would not change revenues or other socioeconomic metrics for fishery participants and their communities.

If conditions change and inactive or low activity permits increase their landings of summer flounder (as the result of constraints in other fisheries, quota reallocation through this action, market factors, etc.), some permit holders that are currently active in the fishery may experience negative socioeconomic impacts as the result of limited quotas being further spread among participants. The fishing communities associated with these permit holders also could experience negative impacts. The magnitude of these effects would depend on the degree of re-entry to the fishery and how active the formerly latent vessels become, which is difficult to predict.

If many latent vessels re-enter the fishery and/or these vessels begin landing substantial amounts of summer flounder, more restrictive management measures would likely be necessary for all summer flounder vessels to ensure that quotas are not exceeded. Because there are several hundred inactive or mostly inactive federal permits (Table 51; Table 52), the capacity for summer flounder landings from these vessels is theoretically large, however, the likelihood of a large proportion of these vessels becoming active in the fishery is uncertain and probably low.

Slight positive socioeconomic impacts are possible under alternative 1A for those current permit holders with low or no activity, as these vessels would retain the flexibility to target summer flounder in the future and may increase their revenues from summer flounder if that flexibility was utilized. Some of these benefits may be limited if an influx of effort results in tighter management

measures. Under a scenario where latent effort does re-enter the fishery, socioeconomic impacts at the vessel level would likely range from slight positive (for inactive/low activity permit holders who choose to re-enter the fishery) to slight negative (to all currently active summer flounder permit holders and communities if there is a notable influx of latent effort).

Quota reallocation options under alternative set 2 may influence the degree of re-entry to the fishery and associated distributional impacts. Under a revised state-by-state allocation system, whether latent permit holders re-enter the fishery may be driven by how their state allocation and resulting measures change. Participants in some states that have been inactive in recent years may be incentivized to target summer flounder if their state's quota is increased. Under a scup model system (alternative 2D-1 or 2D-2), the winter quota periods would have no state-level measures or quotas. Under this scenario, latent permits (especially those associated with vessels capable of fishing offshore in the winter) may re-enter the fishery if coast-wide winter period measures are appealing enough compared to their particular state measures in recent years.

Overall, the impacts of alternative 1A to the fishery as a whole are likely to be negligible, but for individual participants and communities could range from slight negative to slight positive. An influx of effort is theoretically possible under alternative 1A, resulting in an increase in revenue for some vessels and a decrease in revenue for others. The efficiency of the vessels entering the fishery would have to be compared against those already active in the fishery to quantify the precise economic impacts. Under alternative 1A there may be no changes to current conditions (and therefore no impacts to human communities). Alternatively, there could be slight positive impacts (for permit holders exercising flexibility to fish for summer flounder) and slight negative socioeconomic impacts (due to effort being spread among more participants).

Compared to alternative 1B, alternative 1A is expected to have slightly less negative socioeconomic impacts on low/no activity permit holders and their associated fishing businesses (although the impacts of all alternatives are expected to be small). Similarly, alternative 1A would have less positive impacts to active participants in the fishery compared to 1B, since alternative 1A would not prevent federal latent effort from re-entering the fishery.

7.1.5.2 Alternative 1B: Requalification of Existing Federal Moratorium Permits

Alternative 1B would reduce the number of eligible federal summer flounder moratorium permits, to varying degrees depending on the sub-alternative selected. Under each sub-alternative for permit requalification, impacts to human communities will depend primarily on how many permits are eliminated and how active these permits have been in recent years.

The fishery will still be constrained by annual catch and landings limits, therefore, overall fishery effort in a given year would not be expected to be heavily impacted by any of the 1B sub-alternatives. Summer flounder is a high demand species and it is likely that utilization rates will remain high. Therefore, a reduction in permit capacity is not likely to drive landings each year but will impact the pool of vessels that are eligible to participate in the fishery. Alternative 1B may impact the distribution of effort depending on how active eliminated permits have been or would be in the future.

Impacts to human communities from alternative 1B could include near-term economic impacts through elimination of current effort and opportunity, as well as longer-term economic impacts resulting from reduced potential for latent effort to re-enter the fishery.

Direct near-term, and possibly long-term, negative economic impacts may occur to non-requalifying permit holders that have landed some summer flounder in recent years, and their associated communities. Near-term negative economic impacts would not be expected for permits that are completely inactive, as these vessels are not currently generating any revenue from summer flounder. For permit holders that requalify, near-term and long-term positive economic impacts are possible since overall effort may be spread among a smaller pool of vessels, possibly leading to higher revenues for some vessels.

The magnitude of economic impacts to vessels that requalify and those that do not would depend on a) how many permits are eliminated and b) how active those eliminated permits have been in recent years (i.e., how much landings and revenue they have generated). The more summer flounder landings and revenues that are associated with each group of eliminated permits under each sub-alternative, the larger the distributional impacts will be. Impacts will also depend on what other species eliminated vessels are able to fish for and how dependent are they on summer flounder, with vessels that are more dependent on summer flounder experiencing more negative impacts. Due to the low landings evident in recent years across many eliminated MRIs, it is unlikely that most eliminated vessels are dependent on the summer flounder fishery in a meaningful way.

Table 51 describes the number of eliminated MRIs under each sub-alternative along with their associated landings and revenues over the 5-year time period of August 1, 2009 through July 31, 2014.⁴⁰ Over this time period, all eliminated MRIs under these alternatives are associated with very little or no summer flounder landings in recent years (ranging from 0 to 131,302 total pounds for all eliminated permit holders over this time period, or 0% to 0.32% of coastwide landings).

Table 52 shows the same analysis over the fishing years 2013-2017. Over these years, eliminated MRIs under these alternatives are associated with slightly higher summer flounder landings and revenues, though they are still a relatively small portion of coastwide landings and revenues (ranging from 0.14% to 3.04% of landings and from 0.18% to 3.19% of revenues). This appears to indicate that there was a small influx of effort for summer flounder after the publication of the control date on August 1, 2014.

According to this analysis, even though a substantial portion of summer flounder permits may be eliminated under some alternatives (ranging from 25% to 55% of current MRIs), the overall portion of summer flounder landings and revenues that would be eliminated under any 1B sub-alternative is relatively low and is spread among a few hundred vessels. This indicates that the magnitude of overall impacts is likely to be low, although impacts may vary at the vessel level based on each vessel's recent activity. Near-term positive (for remaining permit holders) or negative economic impacts (for eliminated permit holders) are in general likely to be small or negligible, though some vessels eliminated from the fishery may experience moderate negative impacts if they have recently invested in this fishery or increased effort for summer flounder. Most vessels with eliminated permits would not see a substantial reduction in revenues given that most vessels are landing very small amounts of summer flounder on average and are very unlikely to be highly dependent on the summer flounder fishery. Remaining vessels are unlikely to see a substantial near-term economic benefit from reduced permit capacity in the fishery.

⁴⁰ Although this period is the requalification time frame for only alternatives 1B-1 and 1B-2, it was used in evaluating all sub-alternatives in order to allow comparison between each option.

Table 51: Comparison of impacts of sub-alternatives under Alternative 1B, in terms of associated number of moratorium rights eliminated, with associated landings and revenues between August 1, 2009 and July 31, 2014. Landings thresholds under each sub-alternative refer to commercial landings of summer flounder associated with each MRI.

Sub-alternative under 1B	Time Period	Landings Threshold	# MRIs Eliminated (%)	Combined landings (lb) from eliminated MRIs, 8/1/09-7/31/14	% of coastwide summer flounder landings, 8/1/09-7/31/14	Combined ex-vessel revenue 8/1/09-7/31/14	% of coastwide summer flounder revenue, 8/1/09-7/31/14
1B-1	8/1/09-7/31/14 (5 yrs)	≥1,000 pounds cumulative	516 (55%)	24,529	0.04%	\$54,395	0.05%
1B-2	8/1/09-7/31/14 (5 yrs)	At least 1 pound in any year	448 (48%)	0	0.00%	\$0	0.00%
1B-3	8/1/04-7/31/14 (10 yrs)	≥1,000 pounds cumulative	389 (41%)	5,713	0.01%	\$10,980	0.01%
1B-4	8/1/04-7/31/14 (10 yrs)	At least 1 pound in any year	306 (33%)	0	0.00%	\$0	0%
1B-5	8/1/99-7/31/14 (15 yrs)	≥1,000 pounds cumulative	295 (31%)	2,896	0.01%	\$7,016	0.01%
1B-6	8/1/94-7/31/14 (20 yrs)	At least 1 pound in 20% of years (i.e., in at least 4 years over this 20-year period)	271 (29%)	181,302	0.32%	\$326,034	0.28%
1B-7	8/1/94-7/31/14 (20 yrs)	≥1,000 pounds cumulative	233 (25%)	2,414	0.00%	\$5,619	0.00%

Table 52: Comparison of impacts of sub-alternatives under Alternative 1B, in terms of associated number of moratorium rights eliminated, with associated landings and revenues between January 1, 2013 through December 31, 2017. Landings thresholds under each sub-alternative refer to commercial landings of summer flounder associated with each MRI.

Sub-alternative under 1B	Time Period	Landings Threshold	# MRIs Eliminated (%)	Combined landings (lb) from eliminated MRIs, 1/1/13-12/31/17	% of coastwide summer flounder landings, 1/1/13-12/31/17	Combined ex-vessel revenue 1/1/13-12/31/17	% of coastwide summer flounder revenue, 1/1/13-12/31/17
1B-1	8/1/09-7/31/14 (5 yrs)	≥1,000 pounds cumulative	516 (55%)	1,083,694	3.04%	\$3,540,052	3.19%
1B-2	8/1/09-7/31/14 (5 yrs)	At least 1 pound in any year	448 (48%)	663,985	1.86%	\$2,326,859	2.1%
1B-3	8/1/04-7/31/14 (10 yrs)	≥1,000 pounds cumulative	389 (41%)	503,356	1.41%	\$1,613,440	1.46%
1B-4	8/1/04-7/31/14 (10 yrs)	At least 1 pound in any year	306 (33%)	334,151	0.94%	\$1,117,053	1.01%
1B-5	8/1/99-7/31/14 (15 yrs)	≥1,000 pounds cumulative	295 (31%)	109,573	0.31%	\$393,944	0.36%
1B-6	8/1/94-7/31/14 (20 yrs)	At least 1 pound in 20% of years (i.e., in at least 4 years over this 20-year period)	271 (29%)	290,894	0.81%	\$946,917	0.85%
1B-7	8/1/94-7/31/14 (20 yrs)	≥1,000 pounds cumulative	233 (25%)	48,464	0.14%	\$204,436	0.18%

In addition to the near-term impacts of a reduced pool of participants, sub-alternatives under alternative 1B would also lead to reduced potential for future expansion of latent effort. As described above under alternative 1A, broader management or economic conditions could drive latent permit holders to re-enter the fishery for summer flounder (e.g., restrictions in other fisheries, quota reallocation, market conditions, etc.) if they are still permitted. The sub-alternatives under alternative 1B would prevent re-entry to a degree, and/or would reverse some of the re-entry that appears to have occurred since publication of the control date. The reduced potential for latent effort would have positive economic impacts on remaining vessels, and possibly on their communities depending on the community's characteristics, by reducing the likelihood of needing to spread quota between a larger number of vessels, and reducing uncertainty about whether measures would need to be restricted due to an influx of latent effort. Permit holders with eliminated summer flounder permits could experience negative economic impacts due to not having the opportunity to target summer flounder in the future. Some fishing communities may experience mixed impacts from these alternatives, depending on their associated permit holders and how many requalify.

It is worth noting that this alternative has no impact on state level permits. Re-entry of latent effort would still be possible in state waters under this alternative (in some states, depending on current and future state-level restrictions), confounding the impacts of reductions in federal permit capacity.

Analysis of the number of MRIs eliminated (including permits in CPH) by state was also conducted for each sub-alternative (Table 53). The "home port" of a vessel as indicated by the owner on the official U.S. Coast Guard documentation was used to associate an approximate number of MRIs with each state, to describe general possible impacts by state. However, home port does not necessarily reveal where these vessels typically land, as some vessels are permitted to land in multiple states. A small number of permits that would be eliminated under alternative 1B identify their home port in states that are outside the management unit (i.e., Texas and Florida).

Among the states with effected permits, some states have more eliminated permits than others. In terms of home port states that stand to lose the most summer flounder MRIs under Alternative 1B, Massachusetts ranks highest for all sub-alternatives. For Massachusetts, the percentage of their MRIs eliminated under each sub-alternative ranges from 38% to 77%, indicating that there are many inactive federal permits associated with a Massachusetts home port. New Jersey ranks second highest in terms of eliminated MRIs under most sub-alternatives. All states stand to lose significantly more MRIs with a shorter qualification period (sub-alternatives 1B-1 and 1B-2), and when looking at a longer qualification period (sub-alternatives 1B-6 and 1B-7), the clear majority of MRIs not requalifying are in the northern region of the fishery (Table 53). Although some states would have a high proportion of permits eliminated under some sub-alternatives, it is important to remember that the previously described analysis of recent effort indicates that individual eliminated permits are mostly associated with little or no summer flounder landings in recent years, with cumulative landings over several hundred vessels under all options making up a small percentage of coastwide landings. Thus, despite having a high number or proportion of eliminated permits on paper for some states, the actual socioeconomic impact on those states is expected to be minimal.

**Table 53: Number of MRIs requalifying (REQ.) and eliminated (ELIM.) under each 1B sub-alternative by state of home port.
C= Confidential.**

Home port state	1B-1		1B-2		1B-3		1B-4		1B-5		1B-6		1B-7	
	REQ.	ELIM.	REQ.	ELIM.	REQ.	ELIM.	REQ.	ELIM.	REQ.	ELIM.	REQ.	ELIM.	REQ.	ELIM.
ME	3	39	3	39	9	33	14	28	19	23	22	20	23	19
NH	C	14	C	13	C	13	6	C	4	11	6	C	5	10
MA	83	276	106	253	142	217	180	179	187	172	203	156	223	136
RI	76	12	76	12	81	C	83	5	83	C	81	7	83	C
CT	15	C	17	7	16	8	18	6	17	C	14	10	19	C
NY	55	35	62	28	62	28	66	24	67	23	69	21	68	22
NJ	94	74	117	51	122	46	142	26	139	29	141	27	146	22
PA	C	C	3	C	C	C	C	C	C	C	C	C	C	C
DE	0	C	0	C	0	C	0	C	0	C	0	C	0	C
MD	C	C	C	C	4	C	5	0	4	C	4	C	4	C
VA	23	32	30	25	33	22	38	C	41	14	45	10	48	C
NC	69	17	72	14	78	8	79	7	81	5	80	6	84	C
FL	0	C	0	C	0	C	0	C	0	C	C	C	C	C
TX	C	0	C	0	C	0	C	0	C	0	C	0	C	0

Overall, impacts from the sub-alternatives under 1B are expected to vary by individual permit holder and by fishing community, depending on the degree of activity of eliminated vessels and the extent to which each sub-alternative prevents re-entry of latent effort into the fishery. The socioeconomic impacts of each sub-alternative under 1B at the vessel level is likely to range from slight positive (for remaining permit holders and their communities due to the reduced potential for re-entry of latent effort) to moderate negative (for eliminated permit holders, due to likely small to moderate losses in revenues as well as lost flexibility to fish for summer flounder in the future).

Among the sub-alternatives considered, the magnitude of expected impacts at the vessel level is likely to vary slightly between each sub-alternative in the short-term based on the analysis of 2013-2017 landings and revenues shown in Table 52. As a percentage of overall coastwide landings and revenues, the highest magnitude of negative impacts (to eliminated permit holders) and positive impacts (to remaining permit holders) are likely to occur from alternative 1B-1 due to having the highest associated landings and revenues for summer flounder, followed in order by alternative 1B-2, 1B-3, 1B-4, 1B-6, 1B-5, and 1B-7 (Table 52). Again, these impacts are likely to be overall small, but would be expected to vary more at the individual vessel level.

Compared to alternative 1A, alternative 1B and its sub-alternatives are expected to have moderately more adverse socioeconomic impacts on eliminated individual permit holders and their associated fishing businesses (although the impacts of all alternatives are expected to be small). Similarly, alternative 1A would have fewer positive impacts to active participants in the fishery compared to 1B, since alternative 1A would not prevent federal latent effort from re-entering the fishery.

7.1.6 Summary of Impacts of Alternative Set 1

Because overall fishery effort is not expected to be heavily influenced by these alternatives, and catch and landings will remain driven by annual limits, each alternative should have no impacts to minor impacts on the summer flounder stock, non-target species, habitat, or protected resources compared to their current condition as described in the sections above. This results in moderate positive impacts to the summer flounder stock and non-target species, indirect slight negative impacts to habitat, and slight negative to slight positive impacts to protected resources under all alternatives. Impacts of sub-alternatives under 1B will be primarily socioeconomic impacts to individual permit holders and fishing communities. However, given the small magnitude of recent summer flounder landings and revenues from eliminated permits under requalification alternatives, the short-term impacts of these alternatives are likely to be small overall. There is some uncertainty associated with the long-term socioeconomic impacts depending on the realistic potential for latent effort to re-enter the fishery, as described above. A summary of impacts to each VEC is provided in Table 54.

Table 54: Summary of impacts of Alternative Set 1: requalification of existing commercial moratorium permits.

Alt.	Description	Expected Impacts				
		<i>Summer flounder</i>	<i>Non-target species</i>	<i>Habitat</i>	<i>Protected Resources</i>	<i>Human communities^a</i>
1A	No action/ <i>status quo</i>	Moderate +	Moderate +	Indirect slight negative	Slight - to slight +	No impact if conditions remain similar; slight - if incentives to re-enter fishery change; slight + to latent permit holders due to flexibility
1B-1	Requalify at $\geq 1,000$ pounds cumulatively over 8/1/09-7/31/14 (5 yrs)	Moderate +	Moderate +	Indirect slight negative	Slight - to slight +	No impact to moderate - (for eliminated permit holders), no impact to slight + (for remaining permit holders)
1B-2	Requalify at ≥ 1 pound in any year from 8/1/09-7/31/14 (5 yrs)	Moderate +	Moderate +	Indirect slight negative	Slight - to slight +	No impact to moderate - (for eliminated permit holders), no impact to slight + (for remaining permit holders)
1B-3	Requalify at $\geq 1,000$ pounds cumulatively over 8/1/04-7/31/14 (10 yrs)	Moderate +	Moderate +	Indirect slight negative	Slight - to slight +	No impact to moderate - (for eliminated permit holders), no impact to slight + (for remaining permit holders)
1B-4	Requalify at ≥ 1 pound of summer flounder in any one year from 8/1/04-7/31/14 (10 yrs).	Moderate +	Moderate +	Indirect slight negative	Slight - to slight +	No impact to moderate - (for eliminated permit holders), no impact to slight + (for remaining permit holders)
1B-5	Requalify at $\geq 1,000$ pounds cumulatively over 8/1/99-7/31/14 (15 yrs)	Moderate +	Moderate +	Indirect slight negative	Slight - to slight +	No impact to moderate - (for eliminated permit holders), no impact to slight + (for remaining permit holders)
1B-6	Requalify at ≥ 1 lb in 20% of years 8/1/94-7/31/14 (20 yrs; i.e., at least 1 lb of landings is required in any 4 years over this time period).	Moderate +	Moderate +	Indirect slight negative	Slight - to slight +	No impact to moderate - (for eliminated permit holders), no impact to slight + (for remaining permit holders)
1B-7	Requalify at $\geq 1,000$ pounds cumulatively over 8/1/94-7/31/14 (20 yrs).	Moderate +	Moderate +	Indirect slight negative	Slight - to slight +	No impact to moderate - (for eliminated permit holders), no impact to slight + (for remaining permit holders)

^a All impacts to human communities are uncertain and likely mixed depending on the stakeholder/community affected, as described above.

7.2 IMPACTS OF ALTERNATIVE SET 2: COMMERCIAL QUOTA ALLOCATION

This alternative set contains options for reallocation of the annual commercial quota for summer flounder. The allocation alternatives are fully described in section 5.2 and briefly recapped here.

Alternative 2A (no action/status quo) would make no changes to the current commercial allocations established on the basis of 1980-1989 landings history (section 5.2.1).

Alternative 2B (Adjust State Quotas Based on Recent Biomass Distribution) would modify state-by-state allocations by accounting for a shift in relative exploitable biomass by region between 1980-1989 and 2007-2016. There are two sub-options for calculating the change in relative exploitable biomass and applying this change to revised allocations. Both options would shift allocation from the Southern region (states of New Jersey through North Carolina) to the Northern region (states of New York through Maine).

Alternative 2C (Revise State Allocations Above a Commercial Quota Trigger Point) would create state allocations that vary with overall stock abundance and resulting commercial quotas. For all years when the annual commercial quota is at or below a specified annual commercial quota trigger level, the state allocations would remain *status quo*. In years when the annual coastwide quota exceeded the specified trigger, the trigger amount would be distributed according to *status quo* allocations, and the additional quota beyond that trigger would be distributed by equal shares (with the exception of Maine, New Hampshire, and Delaware, which would split 1% of the additional quota). Alternative 2C has two sub-alternatives for different annual coastwide quota triggers.

Alternative 2D ("Scup Model" Quota System for Summer Flounder) would allocate quota into three unequal seasonal periods, as is done for scup. During the two winter periods, January-April ("Winter I") and November-December ("Winter II"), a coastwide quota system would be implemented in conjunction with a system of coastwide possession limits and other measures. In a "Summer" period, May-October, a state-by-state quota system would be implemented by the Commission, and state-specific measures would be set to constrain landings to the summer period state quotas. Alternative 2D has two sub-alternatives for exempting or not exempting the state of Maryland from this allocation system.

The quota reallocation alternatives under alternative set 2 are not expected to impact overall fishing effort in terms of annual catch and landings (i.e., total removals of summer flounder from the commercial fishery), which will remain driven by annual catch and landings limits. The allocation alternatives will primarily affect access to the resource at the state/and or individual fishing vessel level within the management unit, depending on the allocation option selected. This could result in a somewhat modified distribution of fishing effort in space and time, as described below, and is expected to modify the distribution of landings (and thus revenues) by state and port. Changes in access to summer flounder quota could also impact effort in terms of the total number and duration of trips and hauls for summer flounder if modified allocations result in a change in participation in the fishery terms of vessel sizes or gear types; however, in general the fishery is expected to remain dominated by trawl gear.

Changes in the distribution of effort as the result of reallocation are generally difficult to predict, as effort is influenced by many factors. Characteristics of the commercial fishery, including seasonal effort, spatial effort, gear types used, and landings by state are described in section 6.5 of

the Affected Environment in this document. From these descriptions, some general patterns of fishing effort can be described to provide a basis for predicting the general range of impacts of each reallocation alternative. In general, the commercial fishery for summer flounder varies seasonally and by region, with larger trawl vessels generally fishing offshore on the continental shelf in the winter months (approximately late October through April) and with summer effort (approximately May through early October) taking place primarily in state waters (0-3 miles from shore), corresponding with the seasonal inshore-offshore migrations of summer flounder (see section 6.1.3.1.) As described in section 6.5.1.2.3., during November-April, over 75% of the landings are estimated to originate from federal waters. May, September, and October see a more balanced mix of federal and state waters harvest, while June-August harvest occurs mostly in state waters. In the summer, more of the fishery is prosecuted in state waters with smaller vessels using a wider variety of gear types. While bottom trawls are still the dominant gear type in the summer, other gear types, such as hand lines, gill nets, and other gear types are more commonly used compared to the winter fishery. Larger vessels (classified as vessels 51 tons or larger) are dominant in the winter offshore fishery, while during the spring and early fall, more of a mix of small and larger vessels participate. By state, the commercial fisheries in Virginia and North Carolina are clearly dominated by large trawl vessels fishing offshore in the winter. Other states have more of a mix of gear types, vessel sizes, and dominant months of commercial summer flounder effort (see section 6.5.1.2).

As the result of reallocation alternatives in this document, some location and/or timing of commercial summer flounder effort could change, which could affect each VEC, although the magnitude and direction of impacts are difficult to predict. Offshore winter fishing effort is not expected to change substantially in terms of location, as the larger vessels that typically participate in this season have historically been more mobile vessels that target prime summer flounder fishing locations offshore even when long steam times are required to do so. For this fleet, footprints of fishing effort do not necessarily closely correlate with distance from state of landing. The locations of offshore fishing effort are thus unlikely to change substantially under reallocation alternatives.

Nearshore effort observed mainly in the summer months (prosecuted by a variety of vessel types with more representation from smaller day boats) may see a small to moderate shift in location under some reallocation alternatives, as discussed below; however, the extent to which this may occur is difficult to predict and would depend on other factors such as management response to increased or decreased quotas. It is also possible that there could be a shift in the balance of offshore winter vs. inshore summer effort under some reallocation alternatives, due to changes in the allocation for states that are dominant in the winter fishery. These possibilities are explored further below.

Because the overall catch will remain driven by annual catch limits, reallocation alternatives in general are not expected to affect the stock status of summer flounder, leading to positive overall impacts on the target resource. For non-target species and protected resources, the possible changes in distribution of fishing effort could lead to changes in interaction rates that may influence stock status, although these effects are highly uncertain, as discussed below. For habitat, any effort shifts resulting from reallocation are not expected to change the overall footprint of fishing effort for summer flounder, over which fishing effort for many species has taken place for many years. However, continued fishing effort within this footprint will prevent recovery of any degraded habitats within this area. For human communities, this action is expected to have socioeconomic

impacts that would vary by state and by individual participants and their communities, based on changes in the distribution of access and revenues from the resource.

7.2.1 Impacts to the Target Stock

7.2.1.1 Alternative 2A: No Action/Status Quo

Alternative 2A would maintain current quota allocations described in Table 10 (section 5.2.1). This is expected to result in moderate positive impacts to the summer flounder stock, since the fishery would continue to be managed to prevent overfishing and to prevent the stock from becoming overfished. The summer flounder stock will continue to be managed under ACLs and AMs as required by the MSA, with the commercial fishery managed under an annual commercial quota derived from the commercial ACL and based on the best scientific information available. Alternative 2A does not modify the current allocation and thus would not be expected to cause changes in the distribution of effort or participation in the fishery.

When compared to alternatives 2B-2C and its sub-alternatives, alternative 2A is expected to result in a similar magnitude of moderate positive impacts. None of these alternatives are expected to change the overall level of effort in the fishery, which will continue to be constrained by ACLs and the annual commercial quota. The changes in commercial allocation under alternatives 2B, 2C, and 2D are expected to result in changes in the distribution of effort and participation by state and individual fishing vessels, however, these changes are not expected to result in biological effects on the summer flounder stock that would modify stock status, as described below. Therefore, the positive impacts to summer flounder from both alternatives are not expected to meaningfully differ in their magnitude.

7.2.1.2 Alternative 2B: Adjust State Quotas Based on Recent Biomass Distribution

Alternative 2B, under either of its sub-alternatives 2B-1 and 2B-2, would shift quota allocation from the Southern region of the management unit (North Carolina through New Jersey) to the Northern region (New York through Maine). Under alternative 2B-1, the total amount of allocation shifted from the South to the North would be 6% (with Northern states increasing their relative allocations by 19% and southern states decreasing their relative allocations by 9%), while under 2B-2, allocation shifted to the North from the South would 13% of the coastwide allocation (with the Northern states increasing their allocations by 40% and the Southern states decreasing theirs by 19%). This alternative would thus increase access to the fishery for vessels in Northern states, possibly leading to changes in effort distribution. Any changes in fishery effort would depend on the characteristics of each state's fishery and how management responded to increased or decreased quotas, as well as additional external factors that may drive regional effort fluctuations, like local market conditions.

Although changes in the distribution of fishing effort by state and by fishing vessel may occur under alternatives 2B-1 and 2B-2, this is not expected to affect the biological characteristics of the summer flounder stock in a way that would impact overall stock status. Summer flounder is managed and assessed as a single unit stock, and there is currently no evidence to suggest that relatively small to moderate scale changes in the location of fishing effort would impact stock status, if overall effort in the fishery remains constrained. As described above, it is possible that under both alternatives 2B-1 and 2B-2 that effort may shift toward Northern states, especially nearshore effort. It is likely that the location of offshore effort will remain similar to current condition, for reasons described in the beginning of section 7.2. It is possible that a slight shift in the balance between winter offshore fishing and summer inshore fishing may occur, with slightly

more effort possibly shifting to nearshore areas, although this is difficult to predict and depends on each state's future management measures. Any such shift is likely to be small in magnitude. Virginia and North Carolina (which mostly participate in the winter fishery) will still remain dominant players during the winter months under alternatives 2B-1 and 2B-2. In addition, increased allocation in the North may result in larger Northern vessels increasing their offshore fishery participation to counter any decreases in North Carolina and Virginia offshore effort. Any shifts in fishing effort as the result of reallocation are unlikely to have a meaningful biological impact on the stock.

Shifts in timing of fishing effort are also difficult to predict. Most states spread their fishing effort throughout the year using open and closed seasons along with other management measures. Shifts in timing of fishing effort under alternatives 2B-1 and 2B-2 could occur, but would depend on management responses to modified allocations and would vary by state. The timing of fishing effort can also vary based on market factors such as price, and may vary from year to year, so the effect of these alternatives on timing is highly uncertain.

Overall, alternatives 2B-1 and 2B-2 are expected to have moderate positive impacts on the summer flounder resource, as they will work within the existing management framework that aims to prevent negative biological impacts to the stock. All states, regardless of an allocation increase or decrease, will still be required to set management measures to control effort and landings within their revised allocation. Accountability measures will still be in place, including a landings-based accountability system at the state level, and overall catch-based accountability evaluated annually.

Compared to other alternatives in alternative set 2, alternatives 2B-1 and 2B-2 are likely to have a similar magnitude of moderate positive impacts to the summer flounder stock. All alternatives maintain the current management to the annual catch and landings limits, which is designed to prevent overfishing and prevent the stock from becoming overfished. There is not expected to be a notable difference in the biological outcomes between alternative 2B-1 and 2B-2.

7.2.1.3 Alternative 2C: Revise State Allocations Above a Commercial Quota Trigger Point

Similar to alternatives 2A and 2B, alternative 2C is not expected to impact the overall removals of summer flounder from the commercial fishery, but would impact the distribution of effort among states in years when the annual commercial quota is above a certain trigger. The effects of this redistribution would differ from those of alternative 2B, in that there is not a broader North/South pattern of increased/decreased allocation. Instead, some states receive increased allocations under increasing quotas, and some states lose a portion of their allocation under increasing quotas.

As summarized in section 5.2.3, the state allocations would vary as the annual commercial quota grows beyond the specified trigger. For quotas up to the trigger point, allocations remain *status quo*. As the annual commercial quota level grows beyond the quota trigger, the state quota allocation percentages get closer together, i.e., with increasing quotas above the trigger, quota is distributed more evenly among the states (see Figure 6 and Figure 7; section 5.2.3).

The only difference between alternative 2C-1 and 2C-2 is that alternative 2C-1 specifies an 8.40 million pound trigger, while 2C-2 specifies a 10.71 million pound trigger, which impacts how often future quotas would exceed the trigger. Table 13 and Figure 5 in section 5.2.3 indicate that for alternative 2C-1, historically between 1993-2018, the 8.40 million trigger has been exceeded in 22 of 26 of these years, while for alternative 2C-2, the trigger has been exceeded in 17 of 26 of

these years. It would thus be expected that in at least some future years, the quota would be redistributed slightly compared to *status quo* allocations.

In years where the quota was at or below the trigger amount, there would be no allocation changes and impacts would be identical to those described under alternative 2A (no action/*status quo*). As annual quotas grow beyond the quota trigger, the allocation for the states of Rhode Island, New Jersey, Virginia, and North Carolina (states that currently have less than 12.375% of the coastwide allocation) decreases, and the allocation for all other states increases.

As with alternative 2B, the small to moderate shifts in allocation under annual quotas exceeding the trigger are not expected to affect the biological characteristics of the summer flounder stock in a way that would impact overall stock status, since summer flounder is managed and assessed as a single unit stock and overall catch in the fishery will remain constrained by the ACL. Any shifts in allocation away from the states of Rhode Island, New Jersey, Virginia and North Carolina are small to moderate and would likely not occur every year, and would not have a substantial impact on the health of the overall summer flounder population.

Overall, as with alternative 2B, alternatives 2C-1 and 2C-2 are expected to have moderate positive impacts on the summer flounder resource, as they will work within the existing management framework that aims to prevent negative biological impacts to the stock. All states will still be required to control effort and landings within their revised allocation. Accountability measures will still be in place, including a landings-based accountability system at the state level, and overall catch-based accountability evaluated annually.

Compared to other alternatives in alternative set 2, alternatives 2C-1 and 2C-2 are likely to have a similar magnitude of moderate positive impacts to the summer flounder stock. All alternatives maintain the current management to the annual catch and landings limits, which is designed to prevent overfishing and prevent the stock from becoming overfished. Although alternative 2C-1 would result in modified allocations more often than alternative 2C-2, there is not expected to be a notable difference in the biological outcomes between these sub-alternatives.

7.2.1.4 Alternative 2D: Implement "Scup Model" Quota System for Summer Flounder

Under alternative 2D, the same annual catch and landings limits and accountability measures as discussed above would remain in place to constrain summer flounder removals. This is expected to result in the same impacts as described for alternatives 2A-2C; moderate positive impacts on the stock, for similar reasons as described above. Alternatives 2D-1 and 2D-2 are not expected to result in the summer flounder stock becoming overfished.

The difference between alternatives 2D-1 and 2D-2 is that 2D-1 exempts the state of Maryland, while 2D-2 does not. This very slightly modifies the seasonal quota period allocations and the state summer quota periods as described in section 5.2.4. Because Maryland has a relatively small fishery (about seven vessels directing on summer flounder) and a relatively small percent of the current quota allocation (about 2%), the practical differences between these alternatives with regard to their impact on the summer flounder resource is expected to be negligible. In either case, the state of Maryland, like other states, will still be required to implement measures that constrain effort and harvest to the appropriate levels. Thus, alternatives 2D-1 and 2D-2 are expected to have the same magnitude of moderate positive impacts on the summer flounder resource.

While overall catch and landings will still be driven by annual catch and landings limits and associated measures, among all commercial allocation alternatives, the effects of alternative 2D on effort and participation are the most difficult to predict. Alternatives 2D-1 and 2D-2 would open the winter months (January-April and November-December) to any properly permitted summer flounder vessel, under consistent coastwide management measures. While possession limits, fishery closures triggers, and other mechanisms would be put in place to control harvest throughout the winter periods and constrain landings to the period quotas, there is some management uncertainty associated with the expected level of participation in these seasonal fisheries and with what specific management restrictions would be necessary to effectively manage commercial harvest during these periods.

It is difficult to predict whether and how latent effort may re-enter the fishery if there were fewer constraints on participation in the winter. Depending on current state level restrictions that may be preventing some vessels from targeting summer flounder, the scup model allocation system may result in increased participation. In addition, under current state management, not every vessel is able to fish at the same times of the year due to state level seasonal restrictions, but under alternative 2D, there is more likely to be many vessels participating at once. Depending on the coastwide management measures selected (possession limits, closure triggers, etc.), managers may experience some difficulty in constraining effort and landings, especially in the first few years of implementation. It is uncertain how this alternative would impact summer flounder discards, but if winter open seasons for summer flounder close quickly due to a high volume of activity, it is possible that this alternative could lead to increased discarding relative to the other allocation alternatives. Thus, while overall, alternatives 2D-1 and 2D-2 are expected to have moderate positive impacts on summer flounder, these alternatives are likely to have slightly less positive impacts compared to alternatives 2A, 2B-1, 2B-2, 2C-1, and 2C-2 due to the introduction of additional management uncertainty and the possible increased difficulty in controlling catch and landings under this alternative.

7.2.2 Impacts to Non-Target Species

Primary non-target species identified for the commercial summer flounder trawl fishery, as described in section 6.2, are several species of skate, spiny dogfish, Northern sea robin, black sea bass, and scup. Non-target species could be affected by the alternatives for reallocation if these alternatives were expected to change rates of interaction with the summer flounder fishery in a manner that would influence the stock status or the biological sustainability of non-target species, although the likelihood of this occurring is highly uncertain.

Commercial allocation alternatives, as described above, are not expected to influence overall coastwide effort, however, there is the possibility that alternatives 2B, 2C, and 2D could affect spatial and temporal effort trends within this overall effort. Changes in participation resulting from reallocation could also influence the number of total annual trips and hauls for summer flounder, if the composition of gear types and/or vessel sizes changed substantially, although it is highly uncertain to what extent this would occur, if at all. Overall, the fishery is highly likely to remain dominated by trawl vessels, with mesh size restrictions that are unlikely to change substantially. The potential impacts of each alternative depend on each non-target species' existing stock status and how likely reallocation alternatives are to change that status. Impacts to non-target species from commercial allocation alternatives are expected to range from slight negative to moderate positive, depending on the alternative and the non-target species, as described below.

7.2.2.1 Alternative 2A: No Action/Status Quo

As described in section 7.2.1, alternative 2A would make no changes to the current allocations. As with impacts to summer flounder, this alternative would result in moderate positive impacts to non-target species that currently have a positive stock condition, since this alternative would contribute to maintaining that positive stock status.

The stock conditions of non-target species relevant to this action are described in Table 49. With the exception of thorny skate (overfished status) and Northern sea robin (status unknown), none of the non-target species are experiencing overfishing or are currently overfished. Most of these fisheries (with the exception of sea robin) are currently managed by the MAFMC or NEFMC. These fisheries would continue to be managed to prevent overfishing and to prevent the stock from becoming overfished under the requirements of the MSA, based on the best scientific information available. Incidental dead catch of MSA managed species is accounted for through the setting and monitoring of ACLs and AMs.

Alternative 2A would result in no reallocation and therefore no resulting changes in effort or changes in the prosecution of the fishery. Thus, impacts to non-target species from this alternative are expected to be overall moderate positive as they would maintain the positive stock status of most relevant non-target species. For species with unknown or overfished (thorny skate) stock status, alternative 2A would be expected to slight negative to no impacts, as it would be expected to maintain the current overfished or unknown stock status for these species. Given the condition of most non-target species, overall, alternative 1A would result in moderate positive impacts for non-target species.

As described below, the impacts of alternatives 2B-1, 2B-2, 2C-1, 2C-2, 2D-1, and 2D-2, are more uncertain relative to non-target species. As such, there is some uncertainty when comparing alternative 2A to other allocation alternatives. If the other allocation alternatives did not shift effort or change the prosecution of the fishery, alternative 2A would have the same magnitude of moderate positive impacts on non-target species. If the other allocation alternatives modified effort in a manner that negatively impacted non-target species, as discussed below, then alternative 2A would have more positive impacts on non-target species compared to other alternatives.

7.2.2.2 Alternative 2B: Adjust State Quotas Based on Recent Biomass Distribution

As described in section 7.2.1.2, alternative 2B, under either of its sub-alternatives 2B-1 and 2B-2, would shift quota allocation from the Southern region of the management unit (North Carolina through New Jersey) to the Northern region (New York through Maine). Under alternative 2B-1, the total amount of allocation shifted from the South to the North would be 6% (with Northern states increasing their relative allocations by 19% and southern states decreasing their relative allocations by 9%), while under 2B-2, allocation shifted to the North from the South would 13% of the coastwide allocation (with the Northern states increasing their allocations by 40% and the Southern states decreasing theirs by 19%).

It is possible that alternatives 2B-1 and 2B-2 could lead to regional effort changes or other changes in the prosecution of the fishery (e.g., changes in gear type composition or number of total hauls) that could affect interaction rates with non-target species. It is unclear to what extent this may occur, and if interaction rates did change, if it would have a meaningful impact on the stock status of non-target species. Small to moderate scale changes in the locations of fishing effort could increase or decrease localized interaction rates with non-target species. Depending on the distribution of non-target species, the effects of effort redistribution on non-target species are likely

to range from slight negative to slight positive. Most non-target species relevant to this action are distributed throughout the range of summer flounder, however, any non-target species that may have higher densities in more northerly areas may experience increased interactions under alternative 2B. Likewise, non-target species that have lower densities toward the southern end of the management unit may see decreased interactions that could have slight positive impacts on the stock. These effects are highly uncertain, especially given that the overlap in habitat preferences for summer flounder and non-target species may vary by region. Interaction rates with non-target species are also influenced by factors like seasonality of effort, which as previously mentioned, is difficult to predict under various reallocation alternatives.

Because overall current conditions for non-target species are positive (with the exception of thorny skate, which is overfished, and Northern sea robin, which is unknown), if no changes or relatively minor changes in the distribution of effort occurred, the result would likely be moderate positive impacts on non-target species due to the maintenance of current stock conditions (the same impacts as alternative 2A). As described above, if effort or other fishery patterns change, slight negative to slight positive impacts are possible.

Thus, the overall impacts of alternatives 2B-1 and 2B-2 could range from slight negative (if interaction rates changed enough to negatively impact the biological characteristics of non-target stocks) to moderate positive (if little change in interaction rates occurred, or if reallocation reduced interaction rates enough to positively impact stock condition).

As described above, alternatives 2B-1 and 2B-2 would both likely result in some effort shift toward Northern states, especially nearshore effort. Alternative 2B-2 results in a more substantial shift compared to 2B-1, and thus between the two alternatives, alternative 2B-2 has a higher potential for slight negative impacts (if effort distribution changes negatively influence non-target interactions).

As described under alternative 2A, there is some uncertainty when comparing alternative 2B-1 and 2B-2 to other allocation alternatives. Alternatives 2B-1 and 2B-2 could have the same magnitude of moderate positive impacts on non-target species as alternative 2A, if non-target species interactions did not notably change under these alternatives. If fishing effort distribution did change in a manner influencing non-target species interactions, it is possible that alternatives 2B-1 and 2B-2 could have either slightly more negative impacts or slightly more positive impacts compared to alternative 2A, due to the possibility of increased or decreased interactions with non-target species as the result of shifts in fishing effort. Because alternatives 2C and 2D have similar uncertainties regarding the range of impacts as alternative 2B, these three alternatives are likely to have a similar range of the magnitude of impacts.

7.2.2.3 Alternative 2C: Revise State Allocations Above a Commercial Quota Trigger Point

Similar to alternative 2B, the impacts of alternative 2C are uncertain, and specifically for alternative 2C, would vary by year depending on the annual quota and how it influenced the final state allocations.

In years where the quota was at or below the trigger amount, there would be no allocation changes and non-target species impacts would be identical to those described under alternative 2A (no action/*status quo*).

Alternative 2C in some years would result in higher allocations to most states except for Rhode Island, New Jersey, Virginia, and North Carolina, which would see decreased allocations. Thus, there is not as clear of a north/south shift in allocation, although there may be some northerly shift in effort since Virginia and North Carolina currently have the highest percentages of the allocation. Overall changes in effort or fishery prosecution under this alternative are difficult to predict, and thus a range of possible impacts are possible in years when the quota exceeds the reallocation trigger.

As with alternative 2B, because overall current conditions for non-target species are positive (with the exception of thorny skate, which is overfished, and Northern sea robin, which is unknown), if no changes or relatively minor changes in the distribution of effort occurred, the result would likely be moderate positive impacts on non-target species due to the maintenance of current stock conditions (the same impacts as alternative 2A). As described above, if effort or other fishery patterns change, slight negative to slight positive impacts are possible.

Thus, the overall impacts of alternatives 2C-1 and 2C-2 could range from slight negative (if interaction rates changed enough to negatively impact the biological characteristics of non-target stocks) to moderate positive (if little change in interaction rates occurred, or if reallocation reduced interaction rates enough to positively impact stock condition).

As described under alternative 2A, there is some uncertainty when comparing alternative 2C-1 and 2C-2 to other allocation alternatives. Alternatives 2C-1 and 2C-2 could have the same magnitude of moderate positive impacts on non-target species as alternative 2A, if non-target species interactions did not notably change under these alternatives. If fishing effort distribution did change in a manner influencing non-target species interactions, it is possible that alternatives 2C-1 and 2C-2 could have either slightly more negative impacts or slightly more positive impacts compared to alternative 2A, due to the possibility of increased or decreased interactions with non-target species as the result of shifts in fishing effort. Because alternatives 2B and 2D have similar uncertainties regarding the range of impacts as alternative 2C, these three alternatives are likely to have a similar range of the magnitude of impacts. However, alternative 2C is also variable by year and in some years would have impacts that are identical to or close to *status quo* (alternative 2A).

7.2.2.4 Alternative 2D: Implement "Scup Model" Quota System for Summer Flounder

The impacts to non-target species from alternative 2D are highly uncertain given that effort changes, and general changes in the prosecution of the fishery under this alternative, are very difficult to predict. Overall catch and landings of summer flounder will still remain driven by annual catch and landings limits and associated measures, however there may be regional shifts or inshore/offshore shifts in effort that occur, but it is not possible to predict to what extent this would occur without knowing which vessels would likely participate and what management measures may be put in place to constrain harvest during the coastwide winter quota periods.

Alternative 2D-1 (Maryland exemption) and alternative 2D-2 (no Maryland exemption) are very unlikely to have meaningful differences in terms of impacts to non-target species. Maryland has a small summer flounder fishery (about seven vessels directing on summer flounder) and a relatively small percent of the current quota allocation (about 2%). The Maryland fishery is thus unlikely to have substantially different non-target species or interaction rates compared to comparable vessels in other states. Thus, alternatives 2D-1 and 2D-2 are expected to have the same magnitude of impacts ranging from slight negative to moderate positive on non-target species.

Compared to alternative 2A, if major changes in the distribution of effort and prosecution of the fishery do not occur, then alternative 2D would have similar moderate positive impacts as alternative 2A. If fishing effort distribution did change in a manner influencing non-target species interactions, it is possible that alternatives 2D-1 and 2D-2 could have either slightly more negative impacts or slightly more positive impacts compared to alternative 2A, due to the possibility of increased or decreased interactions with non-target species as the result of shifts in fishing effort. Because alternatives 2B and 2C have similar uncertainties regarding the range of impacts as alternative 2D, these three alternatives are likely to have a similar range of the magnitude of impacts.

7.2.3 Impacts to Physical Habitat and EFH

7.2.3.1 Alternative 2A: No Action/Status Quo

Alternative 2A is not expected to alter the prosecution of the fishery in any way that would directly either improve or degrade the quality of habitat. The summer flounder fisheries operate in areas that have been fished for many years, not only for summer flounder but for a variety of species, with a variety of gear types, and this is not expected to change under this alternative, which simply maintains the current allocations and is not expected to alter overall effort levels, times and areas fished, or gear types used in the fishery. However, this alternative does allow continued access to the fishery for summer flounder vessels which are known to interact with habitat through their operation, especially trawl vessels that account for most landings. As described in Table 48, alternatives that allow for recovery of habitat quality would result in positive impacts to the physical environment and habitat, meaning that actions that prevent recovery may result in indirect negative impacts to habitat.

As such, while alternative 2A is not expected to directly alter the level of habitat quality either positively or negatively, this alternative may have slight negative indirect impacts to habitat and EFH by continuing to prevent degraded habitats from recovering (i.e., this alternative will continue the current operating conditions which do not allow for recovery of degraded habitats due to continued fishing in those areas).

Alternative 2A is expected to have the same impacts (indirect slight negative impacts) as all sub-alternatives under alternatives 2B, 2C, and 2D, as described below.

7.2.3.2 Alternative 2B: Adjust State Quotas Based on Recent Biomass Distribution

As described in the sections above, as with alternative 2A, the two sub-alternatives under 2B are not expected to result in changes in overall catch and landings in the fishery. While these alternatives may alter the distribution of effort by region, as described above, these changes are not expected to negatively impact habitat beyond its current condition. The summer flounder fishery has been prosecuted for many years, and the overall footprint of the fishery is unlikely to change. Alternatives 2B-1 and 2B-2 are unlikely to drive effort into places that are not currently impacted by the summer flounder fishery or by trawl effort for the many other species targeted in the Greater Atlantic region.

Like alternative 2A, sub-alternatives under 2B would result in indirect slight negative impacts to habitat, as they contribute to maintaining fishery impacts that prevent the recovery of degraded habitats. Compared to other allocation alternatives, alternative 2B is likely to result in the same magnitude of indirect slight negative impacts.

7.2.3.3 Alternative 2C: Revise State Allocations Above a Commercial Quota Trigger Point

Like alternatives 2A and 2B, alternative 2C is not expected to result in a modified overall footprint of fishing effort for summer flounder and it not expected to increase the level of habitat impacts in any areas within that footprint. The areas fished have been fished for many years by a variety of gear types and fisheries. Alternatives 2C-1 and 2C-2 would result in the same magnitude of slight negative indirect impacts on habitat, resulting from continued fishing preventing recovery of any degraded habitats. Compared to other allocation alternatives, alternative 2C is likely to result in the same magnitude of indirect slight negative impacts.

7.2.3.4 Alternative 2D: Implement "Scup Model" Quota System for Summer Flounder

Like other allocation alternatives, alternative 2D is not expected to result in a modified overall footprint of fishing effort for summer flounder and it not expected to increase the level of habitat impacts in any areas within that footprint. The areas fished have been fished for many years by a variety of gear types and fisheries. Alternatives 2D-1 and 2D-2 would result in the same magnitude of slight negative indirect impacts on habitat, resulting from continued fishing preventing recovery of any degraded habitats. Compared to other allocation alternatives, alternative 2D is likely to result in the same magnitude of indirect slight negative impacts.

7.2.4 Impacts to Protected Resources

As described above in the introduction to section 7, the impacts on protected resources may vary between ESA-listed and MMPA-protected species. For ESA-listed species, any action that could result in take of ESA-listed species is expected to have negative impacts, including actions that reduce interactions. Under the MMPA, the impacts of the proposed alternatives would vary based on the stock condition of each protected species and the potential for each alternative to impact fishing effort. For marine mammal stocks/species that have their PBR level reached or exceeded, negative impacts would be expected from any alternative that has the potential to interact with these species or stocks. For species that are at more sustainable levels (i.e., PBR levels have not been exceeded), any action not expected to change fishing behavior or effort such that interaction risks increase relative to what has been seen in the fishery previously, may have positive impacts by maintaining takes below the PBR level and approaching the Zero Mortality Rate Goal (Table 48). Taking the latter into consideration, the overall impacts on the protected resources VEC for each alternative take into account impacts on ESA-listed species, impacts on marine mammal stocks in good condition (i.e., PBR level has not been exceeded), and marine mammal stocks that have reached or exceeded their PBR level.

The quota reallocation alternatives are not expected to heavily influence overall effort for summer flounder, which will remain driven by annual catch and landings limits. The primarily effect of the allocation alternatives under alternative set 2 will be on fishery access and effort among states in the management unit, which may or may not have notable effects on where the bulk of fishing effort occurs. As described above, offshore fishing effort (which mostly occurs in the winter by larger trawl vessels) may not change substantially, as more mobile vessels will continue to fish in prime summer flounder fishing locations offshore. Inshore effort (prosecuted by a mix of vessels with more small day boats participating) may see a small to moderate shift under reallocation alternatives, as discussed below; however, the extent to which this may occur is difficult to predict and would depend on other factors such as management response to increased or decreased quotas. It is possible that under some options there could be a shift in the proportion of offshore vs. inshore effort.

Interactions with protected resources are difficult to predict as they depend on many factors, including local environmental factors. Combined with the uncertainty of exactly how effort or the prosecution of the fishery may change under reallocation options, any resulting changes in interaction rates with ESA-listed or MMPA-protected species is highly uncertain; therefore, a range of possible impacts is provided.

Overall, the commercial quota reallocation alternatives could have potential impacts on protected resources ranging from moderate positive to moderate negative, with moderate positive to moderate negative impacts likely on non-ESA listed marine mammals, and slight to moderate negative impacts likely for ESA-listed species.

7.2.4.1 *Alternative 2A: No Action/Status Quo*

MMPA (Non-ESA Listed) Species Impacts

As described in section 7.1.4, the summer flounder fishery overlaps with the distribution of non-ESA listed species of marine mammals (cetaceans and pinnipeds). As a result, marine mammal interactions with fishing gear used to prosecute the commercial fishery are possible (i.e., otter trawl gear, see section 6.4). Ascertaining the risk of an interaction and the resultant potential impacts on marine mammals is uncertain because quantitative analyses have not been performed and data are limited (section 6.4). However, we have considered, the most recent (2010-2014) information on marine mammal interactions with commercial fisheries (Hayes *et al.* 2017; https://www.nefsc.noaa.gov/fsb/take_reports/nefop.html).

Aside from pilot whales and several stocks of bottlenose dolphin, there has been no indication that takes of non-ESA listed species of marine mammals in commercial fisheries have gone beyond levels which would result in the inability of each species population to sustain itself. Specifically, aside from pilot whales and several stocks of bottlenose dolphin, the PBR level has not been exceeded for any of the non-ESA listed marine mammal species identified in section 6.4 (Hayes *et al.* 2017). Although pilot whales and several stocks of bottlenose dolphin have experienced levels of take that resulted in the exceedance of each species PBR level, take reduction strategies and/or plans have been implemented to reduce bycatch in the fisheries affecting these species (Atlantic Trawl Gear Take Reduction Strategy, Pelagic Longline Take Reduction Plan effective May 19, 2009 (74 FR 23349); Bottlenose Dolphin Take Reduction Plan, effective April 26, 2006 (71 FR 24776)). These efforts are still in place and are continuing to assist in decreasing bycatch levels for these species. Although NEFOP observer reports⁴¹ and the most recent five years of information presented in Hayes *et al.* (2017) are a collective representation of commercial fisheries interactions with non-ESA listed species of marine mammals, and do not address the effects of the summer flounder fishery specifically, the information does demonstrate that thus far, operation of any fishery has not resulted in a collective level of take that threatens the continued existence of non-ESA listed marine mammal populations, aside from those species (pilot whales and bottlenose dolphin stocks) noted above.

Taking into consideration the above information, and the fact that there are non-listed marine mammal stocks/species whose populations may or may not be at optimum sustainable levels, impacts of alternative 2A on non-ESA listed species are likely to range from slight negative to slight positive. As noted above, there are some marine mammal stocks/species that are experiencing levels of interactions that have resulted in exceedance of their PBR levels. These

⁴¹ https://www.nefsc.noaa.gov/fsb/take_reports/nefop.html.

stocks/populations are not at an optimum sustainable level and therefore, the continued existence of these stocks/species is at risk. As a result, any potential for an interaction is a detriment to the species/stocks ability to recover from this condition. As interactions with non-ESA listed marine mammals are possible under alternative 2A, for these species/stocks with a current sub-optimal stock condition, alternative 2A is likely to result in negative impacts to these species; however, given that effort and interaction rates are not expected to change under alternative 2A, the magnitude of negative impacts is expected to be small.

Alternatively, there are also many non-ESA listed marine mammals that, even with continued fishery interactions, are maintaining an optimum sustainable level (i.e., PBR levels have not been exceeded) over the last several years. For these stocks/species, it appears that the fishery management measures that have been in place over this timeframe have resulted in levels of effort that equate to interaction levels that are not expected to impair the stocks/species ability to remain at an optimum sustainable level. These fishery management measures, therefore, have resulted in indirect slight positive impacts to these non-ESA listed marine mammal species/stocks. Should future fishery management actions maintain similar operating condition as they have over the past several years, it is expected that these slight positive impacts would remain. Thus, given that alternative 2A is not expected to change fishing effort relative to the *status quo*, the impacts of alternative 2A on these non-ESA listed species of marine mammals with positive stock conditions are expected to be slight positive (i.e., continuation of current operating conditions is not expected to result in exceedance of any of these stocks/species PBR level).

Based on this information, overall alternative 2A is expected to have slight negative to slight positive impacts on non-ESA listed species of marine mammals.

ESA Listed Species Impacts

The summer flounder commercial fishery is prosecuted with bottom trawl gear. As provided in section 6.4, ESA listed species of sea turtles, Atlantic sturgeon, and Atlantic salmon are vulnerable to interactions with this gear type, with interactions often resulting in the serious injury or mortality to the species. Based on this, the summer flounder fishery is likely to result in some level some level of negative impacts to ESA listed species. Interaction risks with protected species are strongly associated with amount, time, and location of gear in the water (with vulnerability of an interaction increasing with increases in of any or all of these factors). Because alternative 2A simply maintains the current commercial allocation and will not impact overall effort in a given year, this alternative is not expected to increase or decrease interaction rates with ESA listed species. However, because alternative 2A would maintain current state-level access to the fishery and maintain the possibility of interactions with ESA listed species, slight negative impacts are expected to result from this alternative.

Overall Impacts

Overall, alternative 2A is expected to have slight negative to slight positive impacts on protected resources, with slight negative to slight positive impacts likely on non-ESA listed marine mammals and slight negative impacts likely for ESA-listed species.

Compared to alternatives 2B-2D, alternative 2A is likely to have a slightly narrow range of possible negative or positive impacts, given that under this alternative, interactions with protected resources are slightly more predictable and should remain at close to *status quo* levels. The other commercial

allocation alternatives introduce additional uncertainties regarding how fishery effort may change that could theoretically result in higher negative or higher positive impacts to protected resources.

7.2.4.2 Alternative 2B: Adjust State Quotas Based on Recent Biomass Distribution

As described above, alternative 2B, under either of its sub-alternatives, would shift quota allocation from the Southern region of the management unit (North Carolina through New Jersey) to the Northern region (New York through Maine). Under alternative 2B-1, the total amount of allocation shifted from the South to the North would be 6%, while under 2B-2, allocation shifted to the North from the South would 13% of the coastwide allocation. This increased access to the fishery for vessels in Northern states may result in small to moderate changes in the spatial or temporal patterns of fishery effort that may impact protected resources. However, the extent to which this may occur is uncertain, and interaction rates between this fishery and specific protected resources as the result of small to moderate effort shifts are difficult to predict.

MMPA (Non-ESA Listed) Species Impacts

As described above, alternatives 2B-1 and 2B-2 could lead to regional effort changes or other changes in the prosecution of the fishery (e.g., changes in gear type composition or number of total hauls) that could affect interaction rates with protected resources. It is unclear to what extent this may occur, and if interaction rates did change, if it would have a meaningful impact on the stock status of protected resources. Small to moderate scale changes in the locations of fishing effort could increase or decrease localized interaction rates. Depending on the distribution of each protected species, the effects of effort redistribution on protected species are likely to range from moderate negative to moderate positive. Any protected species that may have higher densities in more northerly areas may experience increased interactions under alternative 2B (with larger changes possible under alternative 2B-2 compared to 2B-1). Likewise, protected species that have lower densities toward the southern end of the management unit may see decreased interactions that could have slight positive impacts on the stock. These effects are highly uncertain, especially given that the overlap in habitat preferences for summer flounder and protected species may vary by region. Interaction rates are also influenced by factors like seasonality of effort, which as previously mentioned, is difficult to predict under various reallocation alternatives.

Thus, the overall impacts of alternatives 2B-1 and 2B-2 on MMPA-protected species could have a broad range from moderate negative (if interaction rates changed enough to negatively impact stock status of MMPA-protected species) to moderate positive (if no changes occurred to species that already have a positive stock condition, or if interaction rates decreased enough to positively influence stock status of species currently in a negative condition).

ESA Listed Species Impacts

The summer flounder commercial fishery is prosecuted with bottom trawl gear. As provided in section 6.4, ESA listed species of sea turtles, Atlantic sturgeon, and Atlantic salmon are vulnerable to interactions with this gear type, with interactions often resulting in the serious injury or mortality to the species. Based on this, the summer flounder fishery is likely to result in some level some level of negative impacts to ESA listed species. Interaction risks with protected species are strongly associated with amount, time, and location of gear in the water (with vulnerability of an interaction increasing with increases in of any or all of these factors). Because alternative 2B may shift effort and could possibly impact the composition of gear types used and/or the number of hauls/trips taken (for example, if the balance of large vs. small vessels or inshore vs. offshore effort changed), the allocation under alternative 2B could lead to increased or decreased interactions with ESA

listed species. As described above, any action that results in continued takes of ESA-listed species is expected to have negative impacts on those species. Therefore, alternatives 2B-1 and 2B-2 are expected to result in slight to moderate negative impacts on ESA-listed species.

Overall Impacts

Overall, the impacts to protected species from alternatives 2B-1 and 2B-2 are highly uncertain and depend on exactly how effort and the prosecution of the fishery may change as the result of allocation. Impacts also vary with the stock status of impacted species. Overall, the impacts of alternatives 2B-1 and 2B-2 range from moderate negative to moderate positive.

As described above, alternatives 2B-1 and 2B-2 would both likely result in some effort shift toward Northern states, especially nearshore effort. Alternative 2B-2 results in a more substantial shift compared to 2B-1, and thus between the two alternatives, alternative 2B-2 has a higher potential for impacts of higher magnitude within the previously described range.

As described under alternative 2A, there is some uncertainty when comparing alternative 2B-1 and 2B-2 to other allocation alternatives. Alternatives 2B-1 and 2B-2 could have the same magnitude of moderate positive impacts on protected species as alternative 2A, if protected species interactions did not notably change under these alternatives. If interaction rates did change, it is possible that alternatives 2B-1 and 2B-2 would have slightly more negative impacts, or slightly more positive impacts, compared to alternative 2A, depending on how exactly changes in the fishery influenced interaction rates with protected species. Alternative 2B is likely to have the same magnitude of possible moderate negative or moderate positive impacts compared to alternatives 2C and 2D, because the expected impacts of each are so uncertain and variable.

7.2.4.3 Alternative 2C: Revise State Allocations Above a Commercial Quota Trigger Point

As described above, alternative 2C, under either of its sub-alternatives, would distribute additional quota above a certain trigger point differently than *status quo* allocations. In years where the quota was at or below this trigger point, allocations would remain *status quo*. In years where the quota trigger is exceeded, the states of Rhode Island, New Jersey, Virginia, and North Carolina would see a reduction in allocation while other states would have their allocations increased. The scale of these changes would be small to moderate for annual quotas near the trigger, and would grow larger as the quotas approached the time series high (17.9 million pounds). A moderate to large redistribution of quota could result in small to moderate changes in the spatial or temporal patterns of fishery effort that may impact protected resources. However, the extent to which this may occur is uncertain, and interaction rates between this fishery and specific protected resources as the result of small to moderate effort shifts are difficult to predict.

MMPA (Non-ESA Listed) Species Impacts

As described above, alternatives 2C-1 and 2C-2 could lead to regional effort changes or other changes in the prosecution of the fishery (e.g., changes in gear type composition or number of total hauls) that could affect interaction rates with protected resources. It is unclear to what extent this may occur, and if interaction rates did change, if it would have a meaningful impact on the stock status of protected resources. Small to moderate scale changes in the locations of fishing effort could increase or decrease localized interaction rates. Depending on the distribution of each protected species, the effects of effort redistribution on protected species are likely to range from moderate negative to moderate positive. These effects are highly uncertain, especially given that the overlap in habitat preferences for summer flounder and protected species may vary by region.

Interactions are also influenced by factors like seasonality of effort, which as previously mentioned, is difficult to predict under various reallocation alternatives.

Thus, the overall impacts of alternatives 2C-1 and 2C-2 on MMPA-protected species could have a broad range from moderate negative (if interaction rates changed enough to negatively impact stock status of MMPA-protected species) to moderate positive (if no changes occurred to species that already have a positive stock condition, or if interaction rates decreased enough to positively influence stock status of species currently in a negative condition).

ESA Listed Species Impacts

The summer flounder commercial fishery is prosecuted with bottom trawl gear. As provided in section 6.4, ESA listed species of sea turtles, Atlantic sturgeon, and Atlantic salmon are vulnerable to interactions with this gear type, with interactions often resulting in the serious injury or mortality to the species. Based on this, the summer flounder fishery is likely to result in some level of negative impacts to ESA listed species. Interaction risks with protected species are strongly associated with amount, time, and location of gear in the water (with vulnerability of an interaction increasing with increases in any or all of these factors). In years when the allocation remained *status quo* due to the annual quota being below the trigger, impacts to ESA-listed species would be expected to be slight negative under both alternatives 2C-1 and 2C-2 (i.e., the same impacts as described above under alternative 2A). Because alternative 2C may shift effort in some years where the annual quota is above the trigger, and could possibly impact the composition of gear types used and/or the number of hauls/trips taken (for example, if the balance of large vs. small vessels or inshore vs. offshore effort changed), the range of allocations under alternative 2C could lead to increased or decreased interactions with ESA listed species. As described above, any action that results in continued takes of ESA-listed species is expected to have negative impacts on those species. Therefore, alternatives 2C-1 and 2C-2 are expected to result in slight to moderate negative impacts on ESA-listed species.

Overall Impacts

Overall, the impacts to protected species from alternatives 2C-1 and 2C-2 are highly uncertain and depend on exactly how effort and the prosecution of the fishery may change as the result of allocation. Impacts also vary with the stock status of impacted species. Overall, the impacts of alternatives 2C-1 and 2C-2 range from moderate negative to moderate positive.

As described above, alternatives 2C-1 and 2C-2 may result in small to moderate effort shifts or changes in the prosecution of the fishery in years when the quota trigger is exceeded, although the extent to which this would occur is unknown. The quota trigger would be exceeded more often under alternative 2C-1 compared to 2C-2, and thus between the two alternatives, alternative 2C-1 has a higher potential for impacts of higher magnitude within the previously described range.

As described under alternative 2A, there is some uncertainty when comparing alternative 2C-1 and 2C-2 to other allocation alternatives. Alternatives 2C-1 and 2C-2 could have the same magnitude of moderate positive impacts on protected species as alternative 2A, if interactions did not notably change under these alternatives. If interaction rates did change, it is possible that alternatives 2C-1 and 2C-2 would have slightly more negative impacts, or slightly more positive impacts, compared to alternative 2A, depending on how exactly changes in the fishery influenced interaction rates with protected species. Alternative 2C is likely to have the same magnitude of

possible moderate negative or moderate positive impacts compared to alternatives 2B and 2D, because the expected impacts of each are so uncertain and variable.

7.2.4.4 Alternative 2D: Implement "Scup Model" Quota System for Summer Flounder

The impacts to protected resources from alternative 2D are highly uncertain given that effort changes, and general changes in the prosecution of the fishery under this alternative, are very difficult to predict. Overall catch and landings of summer flounder will still remain driven by annual catch and landings limits and associated measures, however there may be regional shifts or inshore/offshore shifts in effort that occur, but it is not possible to predict to what extent this would occur without knowing which vessels would likely participate and what management measures may be put in place to constrain harvest during the coastwide winter quota periods. In addition, if shifts did occur, it is not clear to what extent this would influence stock status of marine mammals and ESA-listed species given that interactions can be highly variable and dependent on a number of factors.

MMPA (Non-ESA Listed) Species Impacts

As described above, alternatives 2D-1 and 2D-2 could lead to modifications in the prosecution of the fishery, such as regional inshore effort shifts, a shift between inshore/offshore effort, changes in gear use, changes in total number of hauls, etc. However, it is unclear to what extent this may occur, and the extent to which it would influence interaction rates with MMPA-protected species. Depending on the actual changes in the fishery, the actual changes in interaction rates, and the stock status of affected marine mammals, this alternative could lead to impacts on marine mammals ranging from moderate negative to moderate positive. These effects are highly uncertain, especially given that the overlap in habitat preferences for summer flounder and protected species may vary by region. Interaction are also influenced by factors like seasonality of effort, which as previously mentioned, is difficult to predict under various reallocation alternatives.

Thus, the overall impacts of alternatives 2D-1 and 2D-2 on MMPA-protected species could have a broad range from moderate negative (if interaction rates changed enough to negatively impact stock status of MMPA-protected species) to moderate positive (if no changes occurred to species that already have a positive stock condition, or if interaction rates decreased enough to positively influence stock status of species currently in a negative condition).

ESA Listed Species Impacts

As described above, the summer flounder fishery is likely to result in some level some level of negative impacts to ESA listed species. Interaction risks with protected species are strongly associated with amount, time, and location of gear in the water (with vulnerability of an interaction increasing with increases in of any or all of these factors). If minimal changes in the prosecution of the fishery occurred, impacts to ESA-listed species would be expected to be slight negative under both alternatives 2D-1 and 2D-2 (i.e., the same impacts as described above under alternative 2A). Because alternative 2D may shift effort and other characteristics of the fishery (e.g., the composition of gear types used and/or the number of hauls/trips taken, the balance of large vs. small vessels or inshore vs. offshore effort), alternative 2D could lead to either increased or decreased interactions with ESA listed species, or a mix of impacts depending on the species. As described above, any action that results in continued takes of ESA-listed species is expected to have negative impacts on those species. Therefore, alternatives 2D-1 and 2D-2 are expected to result in slight to moderate negative impacts on ESA-listed species.

Overall Impacts

Overall, the impacts to protected species from alternatives 2D-1 and 2D-2 are highly uncertain and depend on exactly how effort and the prosecution of the fishery may change as the result of reallocation. Impacts also vary with the stock status of impacted species. Overall, the impacts of alternatives 2D-1 and 2D-2 range from moderate negative to moderate positive.

Alternatives 2D-1 and 2D-2 only differ in their exemption of Maryland, which will continue to fish regardless of which allocation scheme is selected. Because of the small size of Maryland's fleet, whether or not this fishery is exempt is likely to have negligible impacts on protected resources.

As described under alternative 2A, there is some uncertainty when comparing alternative 2D-1 and 2D-2 to other allocation alternatives. Alternatives 2D-1 and 2D-2 could have the same magnitude of moderate positive impacts on protected species as alternative 2A, if interactions did not notably change under these alternatives. If interaction rates did change, it is possible that alternatives 2D-1 and 2D-2 would have slightly more negative impacts, or slightly more positive impacts, compared to alternative 2A, depending on how exactly changes in the fishery influenced interaction rates with protected species. Alternative 2D is likely to have the same magnitude of possible moderate negative or moderate positive impacts compared to alternatives 2C and 2D, because the expected impacts of each are so uncertain and variable.

7.2.5 Impacts to Human Communities

The impacts of this alternative set are primarily socioeconomic impacts on states and their fishing communities, including revenues and jobs for vessel owners and crew, shoreside operations, and other associated businesses. Alternatives 2A, 2B, and 2C can be generally described in terms of impacts to states, since they either maintain the *status quo* (2A) or propose modified state-by-state quotas (2B and 2C). Alternative 2D (the "scup model" allocation) is the most extreme departure from current management given that it opens the winter fishery to any permitted vessel and allows those vessels to land in any port provided they are licensed to land in that state. The impacts of this alternative are the most uncertain, as described below.

7.2.5.1 Alternative 2A: No Action/Status Quo

Under alternative 2A, no changes to the commercial allocation would be made. Summer flounder catch and effort would continue to be constrained by annual catch limits and associated management measures. States would continue to be constrained to their existing state allocation, and the distribution of landings by state would remain similar to the generally stable levels observed since allocations were implemented in 1993 (see Figure 38 and Table 39 in section 6.5.1.2). Typically, landings by state as a percentage of the coastwide landings do not fluctuate much from year to year, since allocations are constant and most states land or come close to landing their quota. Exceptions can occur under special circumstances, such as 2012-2013 when a high amount of North Carolina landings were landed in Virginia by mutual agreement due to shoaling at Oregon Inlet, NC.

The socioeconomic impacts of the existing allocations have varied depending on the state, although as the allocations have been in place for 25 years, conditions in each state resulting from state allocations have been relatively stable in recent years. Generally, states with more allocation currently experience more positive socioeconomic benefits; however, socioeconomic benefits also vary depending on the management approaches used to achieve each allocation, and with external

economic and community factors. Each state manages their fishery differently in terms of total number of participants, possession limits, seasons, and other measures; these measures are a large driver of the social and economic impacts of the current quotas. Socioeconomic consequences of the current state allocations are also dependent on factors such as local or regional market conditions, dependence of the state's fishing industry on summer flounder, and community resilience characteristics of ports and communities in each state. Overall, the *status quo* socioeconomic condition relative to commercial allocations is mixed.

Throughout the development of this amendment, states have reported varied socioeconomic impacts resulting from their current allocation share. Some Northern states have reported negative socioeconomic impacts due to a perceived mismatch between their current allocation and summer flounder availability in their waters, especially in recent years as the stock distribution and center of biomass have appeared to shift northward. New York in particular has reported negative socioeconomic impacts of their current allocation as the result of a) perceived problems with the original 1980-1989 landings data used to set current allocations, b) relatively higher availability in waters off of New York relative to their current allocation shares, and c) a disparity in their allocation compared to two nearby states, Rhode Island and New Jersey. Other states have experienced long-term positive socioeconomic impacts from the existing quota allocations, in particular Rhode Island, New Jersey, Virginia, and North Carolina, which have the highest allocation shares and the highest resulting revenues.

Recent socioeconomic information for the commercial summer flounder fishery is provided in section 6.5. Overall, alternative 2A is expected to maintain the current socioeconomic conditions by state, resulting in mixed and variable impacts by state ranging from moderate negative to moderate positive.

7.2.5.2 Alternative 2B: Adjust State Quotas Based on Recent Biomass Distribution

As described above, alternative 2B, under either of its sub-alternatives 2B-1 and 2B-2, would shift quota allocation from the Southern region of the management unit (North Carolina through New Jersey) to the Northern region (New York through Maine). Both sub-alternatives are expected to result in mixed socioeconomic impacts that vary by state, with increased revenues in states New York and north and decreased revenues in states New Jersey and south.

Under alternative 2B-1, the total amount of allocation shifted from the South to the North would be 6% (with Northern states increasing their relative allocations by 19% and southern states decreasing their relative allocations by 9%), while under 2B-2, allocation shifted to the North from the South would 13% of the coastwide allocation (with the Northern states increasing their allocations by 40% and the Southern states decreasing theirs by 19%). Each state's change in revenues is expected to be heavily influenced by the percentage change in that state's allocation, relative to their existing allocation. It is impossible to precisely predict the impacts to revenue and employment from changes in allocation, since the distribution of socioeconomic benefits will vary based on a number of factors. Among these factors are: state/port level interest in and dependence on the summer flounder fishery, current or future state level restrictions on the number of participants, other state management measures to constrain harvest to the allocation, and broader economic resilience of each state and port. The distribution of economic benefits will depend on price and other market conditions that vary by location and over time.

Alternative 2B-2 would be expected to have greater positive socioeconomic benefits to the Northern states compared to alternative 2B-1, as this sub-alternative presents a more substantial

shift in allocation from the southern states to the northern states. Likewise, alternative 2B-2 would have more negative socioeconomic impacts on southern states. Under alternative 2B-1, the total amount of allocation shifted from the South to the North would be 6% (with Northern states increasing their relative allocations by 19% and southern states decreasing their relative allocations by 9%), while under alternative 2B-2, allocation shifted to the North from the South would be 13% of the coastwide allocation (with the Northern states increasing their allocations by 40% and the Southern states decreasing theirs by 19%). In both cases, allocation shifts of this magnitude could have substantial impacts on some states.

Specifically, alternatives 2B-1 and 2B-2 are likely to have high positive impacts for the states of New York through Massachusetts, all of which have important directed fisheries for summer flounder. Slight positive impacts are possible for Maine and New Hampshire given that these northern states do not currently have a directed fishery for summer flounder and currently have a very small portion of the coastwide allocation. The increase in allocation under alternatives 2B-1 and 2B-2 would result in Maine and New Hampshire maintaining a very low percentage of the coastwide quota (less than 0.07%) and is unlikely to encourage these states to develop directed fisheries for summer flounder. However, increased allocation could result in increased flexibility for fishermen in these states to land and sell a slightly higher total amount of any incidentally caught summer flounder if desired. These states could also transfer their small poundage amounts of allocation to other states.

Alternatives 2B-1 and 2B-2 are expected to have a range of impacts on southern states ranging from slight negative to high negative. For most states New Jersey through North Carolina, summer flounder is an important target species, and a loss of 9% or 19% of their current allocation (under alternatives 2B-1 and 2B-2, respectively) is likely to result in moderate to high negative impacts in states with directed fisheries. The state of Delaware does not have a directed fishery for summer flounder, but could experience slight negative socioeconomic impacts due to a reduced allocation for summer flounder bycatch. Delaware typically is allocated zero quota at the beginning of each fishing year due to a substantial overage many years ago. A reduced allocation for Delaware would likely ensure that this pattern continues and that summer flounder incidental landings would continue to be restricted in that state.

The general expected impacts of alternatives 2B-1 and 2B-2 is summarized in Table 55. Overall, alternative 2B is likely to result in a range of impacts from high negative to high positive depending on the state, with alternative 2B-2 having distributional impacts of higher magnitude.

Table 55: Expected impacts by state of alternatives 2B-1 and 2B-2.

State	2B-1 % increase/decrease relative to current allocation	2B-1 likely impacts	2B-2 % increase/decrease relative to current allocation	2B-2 likely impacts
ME	+19%	No impact to slight positive	+40%	No impact to slight positive
NH	+19%	No impact to slight positive	+40%	No impact to slight positive
MA	+19%	Moderate to high positive	+40%	High positive
RI	+19%	Moderate to high positive	+40%	High positive
CT	+19%	Moderate to high positive	+40%	High positive
NY	+19%	Moderate to high positive	+40%	High positive
NJ	-9%	Moderate to high negative	-19%	High negative
DE	-9%	No impact to slight negative	-19%	No impact to slight negative
MD	-9%	Moderate to high negative	-19%	High negative
VA	-9%	Moderate to high negative	-19%	High negative
NC	-9%	Moderate to high negative	-19%	High negative

7.2.5.3 *Alternative 2C: Revise State Allocations Above a Commercial Quota Trigger Point*

Under alternative 2C, final state percentage allocations would vary in each year depending on the overall coastwide quota, because the overall allocation percentages vary depending on how much additional quota there is to be distributed. For quotas up to the trigger point, allocations remain *status quo*. In years when the allocation is below the trigger, allocations would be *status quo* and would result in the same socioeconomic impacts as described under alternative 2A (variable by state ranging from moderate negative to moderate positive).

As the annual commercial quota level grows beyond the quota trigger, the state quota allocation percentages get closer together, i.e., with increasing quotas above the trigger, quota is distributed more evenly among the states. Under both sub-alternatives, states with current allocations above 12.375% of the coastwide quota (NC, VA, RI, and NJ) will lose allocation percentage as the quota grows beyond the trigger point, likely leading to negative economic impacts for these states relative to the *status quo*. In years when the annual quota was above the trigger, the impacts to each state would vary depending on the final quota and thus the final allocation, with more extreme changes to allocation occurring in years where the quota is well above average. Under annual quotas that are marginally higher than the trigger amount, slight negative impacts (to NC, VA, RI, and NJ) and slight positive impacts (to all other states) are possible; in years where the annual quota is well above the trigger, the impacts have the potential to be high in magnitude due to substantial modifications to the coastwide allocation.

As described in section 7.2.1.3, the fact that the state allocations vary with the annual coastwide quota makes the impacts of alternatives 2C-1 and 2C-2 somewhat difficult to predict; however, general conclusions can be reached by evaluating what is reasonably expected in terms of commercial quotas in future years. During the period of 1993-2018, annual commercial quotas have ranged from a low of 5.66 million pounds (2017) to a high of 17.9 million pounds (2005). If quotas were to shift out of this range substantially based on new stock information, it is likely that the quota trigger would need to be re-evaluated.

As described in section 5.2.3, the triggers under both sub-alternatives would have been exceeded in the majority of years from 1993-2018. Under 2C-1, historical quotas would have been exceeded in 22 out of 26 years, and under 2C-2, the trigger would have been exceeded in 19 out of 26 years. In the past few years (particularly since 2016), quotas have been below the time series average, meaning that from 2016-2018, the quota trigger would not have been exceeded under either option. However, in most years, if annual quotas remain generally within their historical range, allocations would be modified in most years, to varying degrees (see section 5.2.3, Figure 5 and Table 13).

States that currently have allocations between 2% and 12.5% (MD, CT, NY, and MA) are likely to strongly benefit from these alternatives in years where the annual quota is moderately to substantially above the trigger, whereas the states of North Carolina and Virginia may lose a substantial portion of their quota in years where the annual quota is relatively high. The potential negative economic impacts associated with states that lose share of the overall quota could be somewhat mitigated by the fact that this loss would only happen in relatively higher quota years, meaning revenues for these states may be more stable than what would be expected under a permanent reallocation. For all states, the annual variability in allocation under this alternative may lead to reduced predictability in revenues and a reduced ability to plan for business and infrastructure needs.

The impacts to the states of Maine, New Hampshire, and Delaware are likely to be minimal given that these states currently have only incidental fisheries; there is little to no directed fishing effort. In addition, the alternatives as proposed, while increasing these states allocations by a large percentage relative to their current allocation, still result in very small allocations (less than 0.2%) given that their starting allocations are very small. Thus, both alternatives are likely to have small magnitudes of positive impacts on these states.

The difference between alternative 2C-1 and 2C-2 is the annual quota trigger, which would impact in how many future years the allocation is modified. Alternative 2C-1 is likely to have a higher magnitude of impacts (positive or negative depending on the state) in the long-term compared to alternative 2C-2 given that the trigger is lower and thus allocations would be modified more frequently under this alternative compared to 2C-2.

The general expected impacts of alternatives 2C-1 and 2C-2 is summarized in Table 56. Because the percentage change for each state would vary by year, a range is shown based on historic quotas from 1993-2018. It is important to note that in recent years the annual quotas have been relatively lower and therefore the percentage change for each state would be on the lower end of this range if quotas remained similar to the last few years.

Overall, alternatives 2C-1 and 2C-2 are expected to result in a range of socioeconomic impacts from high negative to high positive, depending on the state and the annual quota in each year.

Again, see section 5.2.3 for a range of annual quotas relative to the proposed triggers and the range of state allocations that result.

Table 56: Expected impacts by state of alternatives 2C-1 and 2C-2, under historic range of commercial quotas.

State	2C-1 % increase/decrease relative to current allocation ^{a,b}	2C-1 likely impacts	2C-2 % increase/decrease relative to current allocation ^{a,c}	2C-2 likely impacts
ME	0 % to +319%	No impact to slight positive	0 % to +241%	No impact to slight positive
NH	0 % to +38,404%	No impact to slight positive	0 % to +29,067%	No impact to slight positive
MA	0 % to +43%	No impact to high positive	0 % to +33%	No impact to high positive
RI	0 % to -11%	No impact to high negative	0 % to -8%	No impact to high negative
CT	0 % to +238%	No impact to high positive	0 % to +180%	No impact to high positive
NY	0 % to +33%	No impact to high positive	0 % to +25%	No impact to high negative
NJ	0 % to -14%	No impact to high negative	0 % to -10%	No impact to high negative
DE	0 % to +941%	No impact to slight positive	0 % to +712%	No impact to slight positive
MD	0 % to +269%	No impact to high positive	0 % to +204%	No impact to high positive
VA	0 % to -22%	No impact to high negative	0 % to -17%	No impact to high negative
NC	0 % to -29%	No impact to high negative	0 % to -22%	No impact to high negative

^a Variable annually as allocation varies with annual quota; range provided covers historic commercial quotas, 1993-2018. Percent increases/decreases may vary from this range if future coastwide quotas exceed historic high quota of 17.9 million lb. Annual quotas below the historic low would result in *status quo* allocations.

^b Annual quotas would have exceeded the 2C-1 trigger in 22 out of 26 years from 1993-2018; see section 5.2.3.

^c Annual quotas would have exceeded the 2C-2 trigger in 17 out of 26 years from 1993-2018; see section 5.2.3.

7.2.5.4 Alternative 2D: Implement "Scup Model" Quota System for Summer Flounder

Alternative 2D (the "scup model" allocation) is the most extreme departure from current management given that it opens the winter fishery to any permitted vessel. Because this quota system eliminates the historical year-round state-by-state quota system, the expected impacts of this alternative are highly uncertain, more so than the impacts of the other allocation options.

It is very difficult to predict the socioeconomic impacts of this alternative on any given state due to uncertainty regarding how many vessels would participate in the winter fishery, and what specific management measures would be implemented under each quota period. In addition, this alternative could have a relatively higher impact on market conditions for summer flounder, which would influence the distribution of socioeconomic benefits. Alternative 2D could lead to high fishing effort toward the beginning of each winter period, which could lead to increased competition for fishing grounds and market share. One possible scenario is that an influx of effort

at the start of the winter coastwide periods may result in an increase in overall landings during those time periods, resulting in possible price declines. As discussed in section 7.1, there are currently a large number of latent federal permits for summer flounder, although most of the permits discussed for elimination from the fishery under alternative set 1 have not been active or have been minimally active in recent years.

The overall impacts of alternative 2D are highly uncertain, but are likely to be more variable at the vessel and shoreside business level compared to the other allocation alternatives, as different businesses would be expected to have varying levels of success under coastwide quota periods implemented for half the year. Some vessels would likely be unsuccessful in maintaining stable revenues under this management system, if they are unable to remain competitive during coastwide fishing periods, particularly if an influx of effort under coastwide management increased competition. However, some vessels are highly likely to benefit from a scup model management system. Larger vessels that are capable of remaining competitive in the offshore winter fishery, as well as smaller vessels that participate primarily in the summer fishery in states with moderate to high summer allocations are likely to benefit.

Shoreside communities would also be impacted by alternative 2D. Many states have invested heavily in shoreside infrastructure to support their state's fleet. Under alternative 2D, the distribution of landings in the winter would be driven more by vessel preference and market factors, which would positively impact some shoreside businesses and negatively impact others. It is difficult to predict how the distribution of landings by state and port would change, and therefore difficult to reach conclusions regarding distributional impacts. Stakeholders and managers have asserted that under alternative 2D, southern shoreside businesses in Virginia and North Carolina would be negatively impacted. Under coastwide measures and allocation, vessels are more likely to opt to land in states that are closer to the center of distribution of the resource and/or in ports where market conditions may be more favorable. Some ports will likely see increased landings during coastwide management periods. Thus, the impacts on shoreside infrastructure and associated jobs are likely to range from high negative to high positive, however these impacts are uncertain and depend on market factors and fishermen behavior.

Similar to alternatives 2B and 2C, the states of Maine, New Hampshire, and Delaware will have smaller expected impacts compared to other states given that these states do not currently participate in a directed fishery for summer flounder. Under alternative 2D, it is possible that some directed effort from vessels in these states would enter the fishery, although the extent to which this would occur is unknown.

The difference between alternative 2D-1 and 2D-2 is whether or not the state of Maryland is exempt from the three-period quota system. Under alternative 2D-1, Maryland will maintain their existing state allocation and continue managing under their IFQ system. In this case, for Maryland, the socioeconomic impacts are likely to be moderate to high positive. Maryland has been relatively successful in managing their fishery under this IFQ system for many years, and vessels have the benefit of knowing how much quota they can plan to land in a given year. Under alternative 2D-2, the state of Maryland has indicated that high negative socioeconomic impacts are possible given that the "scup model" system is incompatible with their IFQ management. IFQ holders would be unable to maintain their individual quotas, except for possibly in the summer months. For all other states, there would likely be a negligible difference between these two sub-alternatives.

The general expected impacts of alternatives 2D-1 and 2D-2 is summarized in Table 57.

Overall, alternative 2D is likely to have impacts to human communities ranging from high negative to high positive, and would vary by individual vessel and shoreside community.

Table 57: Expected impacts by state of alternatives 2D-1 and 2D-2.

State	2D-1 % increase/decrease relative to current allocation	2D-1 likely impacts	2D-2 % increase/decrease relative to current allocation	2D-2 likely impacts
ME	Unknown/ variable	No impact to slight positive	Unknown/ variable	No impact to slight positive
NH		No impact to slight positive		No impact to slight positive
MA		Uncertain/variable, high negative to high positive, depending on vessel and port level outcomes		Uncertain/variable, high negative to high positive, depending on vessel and port level outcomes
RI				
CT				
NY				
NJ				
DE		No impact to slight positive		No impact to slight positive
MD		Moderate to high positive given exemption and maintenance of current allocation		Moderate to high negative given resulting incompatibility with current IFQ system
VA		Variable, high negative to high positive, depending on vessel and port level outcomes; more likely to result in negative impacts due to loss of higher allocation and impacts to shoreside infrastructure		Variable, high negative to high positive, depending on vessel and port level outcomes; more likely to result in negative impacts due to loss of higher allocation and impacts to shoreside infrastructure
NC	Variable, high negative to high positive, depending on vessel and port level outcomes; more likely to result in negative impacts due to loss of higher allocation and impacts to shoreside infrastructure	Variable, high negative to high positive, depending on vessel and port level outcomes; more likely to result in negative impacts due to loss of higher allocation and impacts to shoreside infrastructure		

7.2.6 Summary of Impacts of Alternative Set 2

The quota reallocation alternatives under alternative set 2 are not expected to impact overall fishing effort in terms of annual catch and landings (i.e., total removals of summer flounder from the commercial fishery), which will remain driven by annual catch and landings limits. The allocation alternatives will primarily affect access to the resource at the state/and or individual fishing vessel level within the management unit, depending on the allocation option selected. This could result

in a somewhat modified distribution of fishing effort in space and time, although the extent to which this would occur is difficult to predict. In general, the commercial fishery for summer flounder is typically prosecuted by larger trawl vessels fishing offshore in federal waters in the winter months (approximately late October through April), while summer effort (approximately May through early October) takes place primarily in state waters from a mix of gear types and vessels sizes. These patterns correspond with the seasonal inshore-offshore migrations of summer flounder (see section 6.1.3.1.)

Under reallocation alternatives, offshore winter fishing effort is not expected to change substantially in terms of location, as the larger vessels that typically participate in this season have historically been more mobile vessels that target prime summer flounder fishing locations offshore even when long travel distances are required to do so. For this fleet, footprints of fishing effort do not necessarily closely correlate with distance from state of landing. However, it is also possible that there could be a shift in the balance of offshore winter vs. inshore summer effort under some reallocation alternatives, due to changes in the allocation for states that are dominant in the winter fishery.

Nearshore effort observed mainly in the summer months (prosecuted by a variety of vessel types with more representation from smaller day boats) may see a small to moderate shift in location under some reallocation alternatives, as discussed below; however, the extent to which this may occur is difficult to predict and would depend on other factors such as management response to increased or decreased quotas.

It is difficult to determine how these possible changes in fishing location will affect fleet-wide costs. Inshore fishing requires less fuel consumption than offshore, but there may be more vessels active in the inshore fishery than offshore. It is possible that a reallocation that will result in more inshore fishing effort will result in lower costs per vessel, but fleet-wide summer flounder fishing related costs could conceivably increase.

The reallocation alternatives are expected to modify the distribution of landings (and thus revenues) by state and port, resulting in impacts to vessels, shoreside businesses, and communities/states. Changes in access to quota could also impact effort changes related to the total number and duration of trips and hauls for summer flounder, if modified allocations resulted in modified participation in terms of vessel types, vessel sizes, or gear types; however, in general these changes are not expected to be substantial.

Table 58: Summary of impacts of Alternative Set 2: commercial quota allocation.

Alternative	Description	Expected Impacts				
		<i>Summer flounder</i>	<i>Non-target species</i>	<i>Habitat</i>	<i>Protected Resources</i>	<i>Human communities</i>
2A	No action/ <i>status quo</i>	Moderate +	Moderate +	Indirect slight negative	Slight - to Slight +	Mixed; Moderate + to Moderate - depending on state
2B-1	Adjust state quotas based on northern region percent change in exploitable biomass	Moderate +	Uncertain; Slight - to Moderate +	Indirect slight negative	Uncertain; Moderate - to Moderate +	Mixed; High - to High+ depending on state
2B-2	Adjust state quotas based on absolute change in regional proportion of exploitable biomass	Moderate +	Uncertain; Slight - to Moderate +	Indirect slight negative	Uncertain; Moderate - to Moderate +	Mixed; High - to High+ depending on state
2C-1	Revise state allocations above 8.40 million lb commercial quota trigger point	Moderate +	Uncertain; Slight - to Moderate +	Indirect slight negative	Uncertain; Moderate - to Moderate +	High - to High + depending on state, variable with annual quota
2C-2	Revise state allocations above 10.71 million lb commercial quota trigger point	Moderate +	Uncertain; Slight - to Moderate +	Indirect slight negative	Uncertain; Moderate - to Moderate +	High - to High + depending on state, variable with annual quota
2D-1	Scup model with exemption for Maryland	Moderate +	Uncertain; Slight - to Moderate +	Indirect slight negative	Uncertain; Moderate - to Moderate +	Uncertain; High - to High +; variable by state and vessel
2D-2	Scup model with no exemption for Maryland	Moderate +	Uncertain; Slight - to Moderate +	Indirect slight negative	Uncertain; Moderate - to Moderate +	Uncertain; High - to High+; variable by state and vessel

7.3 IMPACTS OF ALTERNATIVE SET 3: LANDINGS FLEXIBILITY FRAMEWORK PROVISIONS

The framework provision alternatives proposed in this action are administrative and intended to simplify and improve the efficiency of future landings flexibility actions to the extent possible. Under this alternative set, the Council and Board would either take no action, or modify the list of framework provisions in the FMP, which would have no effect on summer flounder management until a future framework action was developed and implemented through a separate process. The purpose of modifying the list of “frameworkable items” in the FMP is to demonstrate that the concepts included on the list have previously been considered in an amendment (i.e., they are not novel).

Because these alternatives are administrative, they are expected to have no impacts on any of the VECs. The impacts of any future framework action relevant to landings flexibility would be analyzed through a separate process, including additional opportunities for public comment.

It is not possible to predict the magnitude and direction of impacts of any future landings flexibility framework actions, because impacts will depend on the configuration of landings flexibility. Future actions would need to define how landings flexibility would work, including resolving questions related to who would be allowed to or required to participate in landings flexibility programs, how such policies should be enforced, and how quota would need to be transferred to maintain the underlying state-by-state quota system (if quota remains allocated by state). As previously mentioned, alternatives 3A and 3B themselves will not have direct impacts on any of the VECs, however, some general considerations for future framework actions are briefly described below to provide additional context for decision making on these alternatives.

Alternative 3A: No Action/Status Quo

Alternative 3A would make no changes to the current list of framework provisions in the Council's FMP. Any future proposed landings flexibility policy that required coastwide participation or modification to the federal measures would likely require a full FMP amendment. The timeline and complexity of such an amendment would heavily depend on the nature of options considered and to what extent landings flexibility could work within the existing management program.

States would remain free to develop landings flexibility agreements by state-level agreements, provided that such agreements are consistent with other Council and Commission FMP requirements and would not require modification to the federal management measures.

Alternative 3B: Add Landings Flexibility as a Frameworkable Issue in the FMP

Under this alternative, any future landings flexibility framework action (likely developed in conjunction with a Commission addendum) would be analyzed through a separate process with associated public comment opportunities and a full description of expected impacts.

Landings flexibility policies have been suggested as a means of addressing rising fishing costs, fuel use, increasing adaptability to market conditions, addressing safety concerns, adapting to a changing distribution of fish, and improving efficiency. However, landings flexibility also raises questions and concerns relative to enforcement (e.g., which state's measures are enforced), administrative burdens associated with associated quota transfers and monitoring, and possibly substantial impacts to shoreside operations. Additional concerns have been raised about the

potential for flooding markets and rapid swings in market prices if many vessels ultimately chased ports with higher prices at a given time.

Given these issues, depending on how landings flexibility is configured, the social and economic impacts associated with a future framework action may be significant and require substantial analysis. Although the timeline for Magnuson Stevens Act requirements could be shortened by completing a framework instead of an amendment, **an EIS may still be required** for NEPA analysis depending on the expected impacts of future management options, **extending the timeline of a typical framework and possibly eliminating time savings entirely.**

7.4 CUMULATIVE EFFECTS ASSESSMENT

A cumulative effects assessment (CEA) is a required part of an EIS or EA according to the Council on Environmental Quality (CEQ) (40 CFR part 1508.7) and NOAA's agency policy and procedures for NEPA, found in NOAA Administrative Order 216-6. The purpose of the CEA is to integrate into the impact analyses the combined effects of many actions over time that would be missed if each action were evaluated separately. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective but, rather, the intent is to focus on those effects that are truly meaningful. This section serves to examine the potential direct and indirect effects of the alternatives in the Summer Flounder Commercial Issues Amendment together with past, present, and reasonably foreseeable future actions that affect the summer flounder environment. It should also be noted that the predictions of potential synergistic effects from multiple actions, past, present and/or future will generally be qualitative in nature.

7.4.1 Valued Ecosystem Components

Consistent with the guidelines for CEA, cumulative effects can be more easily identified by analyzing the impacts of the proposed action on valued ecosystem components (VECs). The affected environment is described in this document based on VECs that were identified for consideration relative to the proposed actions. The VECs described in this document and considered in this CEA are listed below.

VECs represent the resources, areas, and human communities that may be affected by a proposed action or alternatives and by other actions that have occurred or will occur outside the proposed action. VECs are generally the "place" where the impacts of management actions are exhibited. An analysis of impacts is performed on each VEC to assess whether the direct/indirect effects of an alternative adds to or subtracts from the effects that are already affecting the VEC from past, present and future actions outside of the proposed action (i.e., cumulative effects).

The Affected Environment is described in this document based on VECs that were identified specifically for this action, including:

1. The **managed resources**, including the managed species potentially affected by the measures under consideration (impacts described in sections 7.1.1 and 7.2.1);
2. **Non-target species**, including the primary species or species groups that interact with summer flounder, summer flounder habitat, and/or commercial summer flounder fishing gear (impacts described in sections 7.1.2 and 7.2.2);
3. The **physical environment and habitat**, including Essential Fish Habitat (EFH; impact s described in sections 7.1.3 and 7.2.3);

4. **Protected resources**, including ESA-listed and MMPA-protected large and small cetaceans, pinnipeds, sea turtles, fish, and critical habitat occurring in the affected area (impacts described in sections 7.1.4 and 7.2.4);
5. The **human environment**, including socioeconomic aspects of the fisheries (especially commercial fisheries) targeting summer flounder and the communities associated with those fisheries, as well as other human communities with an interest in summer flounder conservation and management (impacts described in sections 7.1.5 and 7.2.5).

7.4.2 Spatial and Temporal Boundaries

The geographic area that encompasses the physical, biological and human communities impacts to be considered in the cumulative effects analysis are described in detail in the Affected Environment (Section 6.0) of this amendment document. The geographic range for impacts to the target species (summer flounder), non-target species, and protected resources is the total range of each species. The geographic range for impacts to habitat and EFH is the range of the core operation of the summer flounder fishery, which generally corresponds to the management unit, i.e., the U.S. waters in the western Atlantic Ocean from the southern border of North Carolina northward to the U.S.-Canadian border with a core area of operation from Massachusetts through North Carolina. For human communities, the core geographic boundaries are defined as those U.S. fishing communities directly involved in the harvest of summer flounder and associated shore-side operations. These communities were found to occur in coastal states from Maine through North Carolina, with a core range from Massachusetts through North Carolina.

The temporal scope of the past and present actions for the target species, non-target species, habitat, and human communities is primarily focused on actions that have occurred after implementation of the main components of the FMP (Amendment 2; 1993). These actions reflect changes to the resource as a result of Council management. For endangered and other protected species, the scope of the past and present actions is on a species-by-species basis (section 6.4.2) and is largely focused on the 1980s and 1990s through the present, when NMFS began generating stock assessments and protections for marine mammals and turtles that inhabit the waters of the U.S. EEZ.

The temporal scope of future actions for all five VECs, which includes the measures proposed by this amendment, extends five years into the future following the expected effective date of these measures in 2020 (i.e., ~2020-2024). This period was chosen because the dynamic nature of resource management and lack of information on projects that may occur in the future make it difficult to predict impacts beyond this timeframe with any certainty.

7.4.3 Actions Other Than Those Proposed in This Document

The impacts of each of the alternatives considered in this amendment document are given in Sections 7.1 through 7.3. The text below describes the meaningful past (P), present (Pr), or reasonably foreseeable future (RFF) actions to be considered other than those actions being considered in this amendment document. Table 59 summarizes the possible impacts of these actions on each VEC. These impacts are described in chronological order and qualitatively, as the actual impacts of these actions are too complex to be quantified in a meaningful way. When any of these abbreviations occur together (i.e., P, Pr, RFF), it indicates that some past actions are still relevant to the present and/or future actions. A brief explanation of the rationale for concluding

what effect each action has (or will have) had on each VECs is provided in the table and is not repeated here.

Note that most of these *other* actions come from *fishery-related activities* (e.g., Federal fishery management actions). Numerous actions have been taken to manage these fisheries through the establishment of the original FMPs and subsequent amendments and framework adjustment actions. The specifications process for annual catch limits to constrain catch and harvest, as required by the MSA, provides the opportunity for the Councils and NOAA Fisheries to regularly assess the status of the fisheries and to make necessary adjustments to ensure that there is a reasonable expectation of meeting the objectives of the FMPs. The statutory basis for federal fisheries management is the MSA. To the degree that this regulatory regime and National Standards are complied with, the cumulative impacts of past, present, and reasonably foreseeable future federal fishery management actions on the target and non-target species VECs should generally be associated with positive long-term outcomes, which should bring about long-term sustainability of human communities, especially those that are economically dependent upon the managed stocks.

Other FMP Actions

As with the summer flounder actions described in Table 59, there are many other FMPs and associated fishery management actions for other species that have impacted these VECs over the temporal scale described in section 7.4.2. These include FMPs managed by the Mid-Atlantic Fishery Management Council, New England Fishery Management Council, Atlantic States Marine Fisheries Commission, and to a lesser extent the South Atlantic Fishery Management Council and are developed in compliance with the MSA. They have had positive long-term cumulative impacts on managed and non-target species, habitat, and protected resources because they constrain fishing effort and manage stocks at sustainable levels. However, constraining fishing effort through regulatory actions can have negative short-term economic impacts. These impacts are sometimes necessary to bring about long-term sustainability of a resource, and should, in the long-term, promote positive effects on human communities.

In some cases, fishery management plan actions are developed in an omnibus fashion to update many plans at once. Actions associated with other FMPs and omnibus amendments have included measures to regulate fishing effort for other species, measures to protect habitat and forage species, and fishery monitoring and reporting requirements. One special case set of omnibus actions are the Standardized Bycatch Reporting Methodology (SBRM) amendments, which cover Federal waters fisheries managed by the New England and/or Mid-Atlantic Councils. The first SBRM amendment became effective in 2008, and an update to these measures was finalized in June 2015 (Amendment 17 to the Summer Flounder, Scup, and Black Sea Bass FMP; 80 FR 37182). The updated regulations modify the following elements of the monitoring program: new prioritization process for allocation of observers if agency funding is insufficient to achieved target observer coverage level; bycatch reporting and monitoring mechanisms; analytical techniques and allocation of at sea fisheries observers; a precision-based performance standard for discard estimates; a review and reporting process; framework adjustment and annual specifications provisions; and provisions for industry-funded observers and observer set-aside programs. Separate from the SBRM amendment, NMFS, in collaboration with the MAFMC and NEFMC, is currently developing an industry funded monitoring amendment. The Omnibus Observer Coverage Amendment will not necessarily result in immediately increased observer coverage because sufficient funds (from both industry for at-sea costs and NOAA for shore side costs) may

not be available. Rather, this amendment will set a mechanism for increasing observer coverage should sufficient funding become available. The MAFMC also recently developed an Omnibus Unmanaged Forage Amendment (82 FR 40721), to prohibit the development of new, or expansion of existing, directed fisheries on unmanaged forage species until adequate scientific information is available to promote ecosystem sustainability. This action could affect the summer flounder resource, non-target species, and protected resources as it provides some protections for forage species that may prey on or be preyed on by these species at various life stages.

Regarding protected resources, an Atlantic Trawl Gear take reduction strategy for long-finned pilot whales (*Globicephala melas*), short-finned pilot whales (*Globicephala macrorhynchus*), white-sided dolphins (*Lagenorhynchus acutus*), and common dolphins (*Delphinus delphis*) has been developed and is described in Section 6. In addition, relevant to interactions with gillnet gear, Take Reduction Teams have also been convened for Atlantic large whales, harbor porpoise, and bottlenose dolphin, as described in section 6.

Summary of Non-Fishing Effects

In addition to the direct effects on the environment from fishing, the cumulative effects (from past, present, and reasonably foreseeable future actions) to the physical and biological dimensions of the environment may also come from non-fishing activities. Non-fishing activities that have meaningful effects on the VECs include the introduction of chemical pollutants, sewage, changes in water temperature, salinity, dissolved oxygen, and suspended sediment into the marine environment. Human-induced non-fishing activities that affect the VECs under consideration in this document are those that tend to be concentrated in nearshore areas. Examples of these activities include, but are not limited to agriculture, port maintenance, beach nourishment, coastal development, marine transportation, marine mining, dredging, and the disposal of dredged material. These activities pose a risk to all of the identified VECs in the long term. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and, as such, may indirectly lower the maximum sustainable yield of the managed resources, and negatively affect non-target species (including deep sea corals) and protected resources.

The overall impact to the affected species and their habitats on a population level is no impact to slight negative, since a large portion of these species have a limited or minor exposure to these local non-fishing perturbations. Decreased habitat suitability would tend to reduce the tolerance of those VECs to the impacts of fishing effort. Impacts from non-fishing activities generally relate to habitat loss from human interaction and alteration or natural disturbances. Mitigation of this outcome through regulations that would reduce fishing effort could then negatively impact human communities.

Non-fishing activities permitted under other federal agencies (e.g. beach nourishment, offshore wind facilities, etc.) require examinations of potential impacts on the VECs. The MSA imposes an obligation on other Federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH (50 CFR 600.930). The eight regional fishery management councils engage in this review process by making comments and recommendations on federal or state actions that may affect habitat for their managed species and by commenting on federal actions likely to substantially affect habitat.

In addition to the activities above, in recent years, offshore wind energy and oil and gas exploration have become more relevant activities in the Greater Atlantic region that are expected to impact all

VECs, as described below. For potential biological impacts of wind, the turbines and cables may influence water currents and electromagnetic fields, respectively, which can affect patterns of movement for various species (target, non-target, protected). Habitats directly at the turbine and cable sites would be affected and there could be scouring concerns around turbines. Impacts on human communities in the general sense will be mixed – there will be economic benefits in the form of jobs associated with construction and maintenance, and replacement of some electricity generating fossil fuels with renewable resources. But there may be negative effects on fishing activities in terms of effort displacement, or making fishing more difficult or expensive near the turbines or cables.

For oil and gas, this timeframe would include leasing and possible surveys. Seismic surveys impact the acoustic environment within which marine species live, and have uncertain effects on fish behaviors that could cumulatively lead to negative population level impacts. The science on this is fairly uncertain. If marine resources were affected by seismic, then so in turn the fisherman targeting the resources would be affected. However, there would be an economic component in the form of increased jobs where there may be some positive effects on human communities.

While there are currently no operational wind farms in Mid-Atlantic waters, potential offshore wind energy sites have been identified off Virginia, Maryland, New Jersey, Delaware, and New York, and there are several proposals to develop wind farms in both nearshore and offshore waters. In New England, offshore wind project construction south of Massachusetts/Rhode Island may begin as early as 2019 (three projects including Vineyard Wind, Bay State Wind, and South Fork Wind Farm). Additional areas have been leased and will have site assessment activities in the next few years. These projects could have slight negative impacts on EFH, as well as summer flounder, non-target, and fishing communities if there are any negative impacts on those resources. Furthermore, there could be negative impacts on protected species of birds and marine mammals if they interact with the wind farms.

The overall impact of offshore wind energy and oil and gas exploration on the affected species and their habitats on a population level is unknown, but likely to range from no impacts to moderate negative, depending on the number and locations of projects that occur, as well as the effects of mitigation efforts.

Global Climate Change

Global climate change affects all components of marine ecosystems, including human communities. Physical changes that are occurring and will continue to occur to these systems include sea-level rise, changes in sediment deposition; changes in ocean circulation; increased frequency, intensity and duration of extreme climate events; changing ocean chemistry, and warming ocean temperatures. Emerging evidence demonstrates that these physical changes are resulting in direct and indirect ecological responses within marine ecosystems, which may alter the fundamental production characteristics of marine systems (Stenseth et al. 2002). Climate change will potentially exacerbate the stresses imposed by fishing and other non-fishing human activities and stressors (described in this section).

Regarding climate change, all of the species considered in this document are potentially vulnerable to changing climate conditions. NOAA scientists have recently developed an assessment of the climate vulnerability of 82 fish and invertebrate species in the Northeast region, including exploited, forage, and protected species. The results of the assessment were published in Hare et

al. (2016). Results from this "Northeast Fisheries Climate Vulnerability Assessment" indicate that climate change could have impacts on Council-managed species that range from negative to positive, depending on the adaptability of these species to the changing environment (Hare et al. 2016).

Based on this assessment, summer flounder was determined to have a moderate vulnerability to climate change. The exposure of summer flounder to the effects of climate change was determined to be "very high" due to the impacts of ocean surface temperature, ocean acidification, and air temperature. Exposure to all three factors occur during all life stages. Summer flounder is an obligate estuarine-dependent species that spawns on the shelf and juveniles develop in estuaries. Adults make seasonal north-south migrations exposing them to changing condition inshore and offshore. The distributional vulnerability of summer flounder was ranked as "high," given that summer flounder spawn in shelf waters and eggs and larvae are broadly dispersed. Adults make regional-scale north-south migrations seasonally. Adults use a range of habitats including estuarine, coastal, and shelf. The life history of the species has a strong potential to enable shifts in distribution. Summer flounder were determined to have low biological sensitivity to climate change (Hare et al. 2016).⁴²

Overall climate vulnerability results for additional Greater Atlantic species, including most of the non-target species identified in this action, are shown in Figure 48 from Hare et al. 2016. Overall, climate change is expected to have impacts that range from positive to negative depending on the species. However, future mitigation and adaptation strategies to climate change may mitigate some of these impacts. The science of predicting, evaluating, monitoring and categorizing these changes continues to evolve. The social and economic impacts of climate change on stakeholders will depend on stakeholder and community dependence on the fisheries, and their capacity to adapt to change. Commercial and recreational fisheries may adapt to change in different ways, and methods of adaptation will differ among regions. In addition to added scientific uncertainty, climate change will introduce implementation uncertainty and other challenges to effective conservation and management (MAFMC 2014).

⁴² The climate vulnerability profile for Summer Flounder is available at:
<https://www.st.nmfs.noaa.gov/ecosystems/climate/northeast-fish-and-shellfish-climate-vulnerability/index>

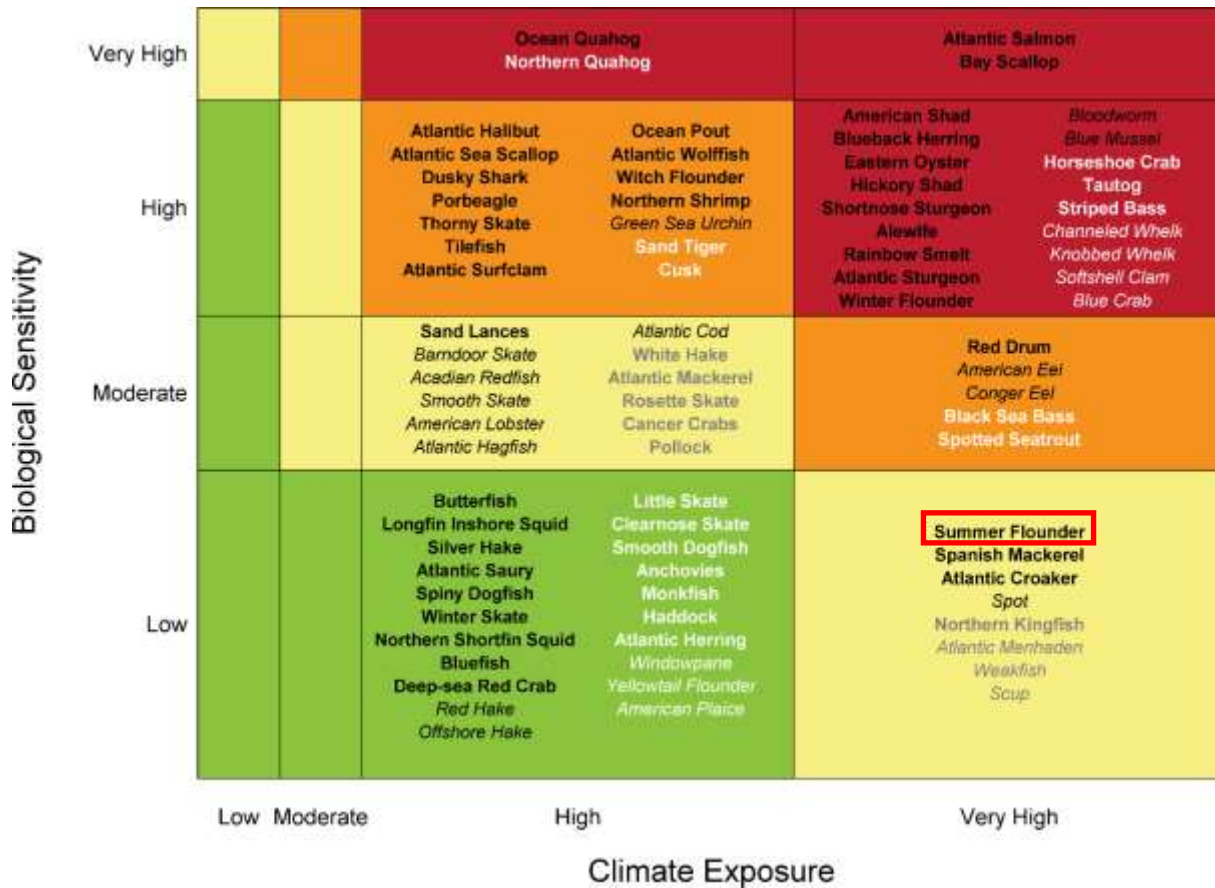


Figure 48: Overall climate vulnerability score for Greater Atlantic species analyzed in Hare et al. 2016, with summer flounder highlighted in red box. Overall climate vulnerability is denoted by color: low (green), moderate (yellow), high (orange), and very high (red). Certainty in score is denoted by text font and text color: very high certainty (>95%, black, bold font), high certainty (90–95%, black, italic font), moderate certainty (66–90%, white or gray, bold font), low certainty (<66%, white or gray, italic font). Figure source: Hare et al. 2016.

The overall impacts of these *other* (past, present, and reasonably foreseeable) actions are summarized in Table 59 and discussed below. These impacts, in addition to the impacts of the management actions being developed in this document (Section 7), comprise the total cumulative effects that will contribute to the significance determination for each of the VECs exhibited later in

Table 62.

Table 59: Summary of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) actions other than those proposed in this document, and their associated impacts. "The FMP" refers to the Summer Flounder, Scup, and Black Sea Bass FMP except where otherwise specified.

FISHERY RELATED ACTIONS						
Action	Description	Impacts on Managed Resources	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
^P Original FMP	Established management plan for summer flounder.	Direct Positive Regulatory tool available to rebuild and manage stocks and to regulate fishing effort	Indirect Positive Regulated fishing effort and gear use	Indirect Positive Reduced fishing effort; gear requirements	Indirect Positive Regulated fishing effort; gear requirements	Indirect Positive Benefited domestic businesses
^{P, Pr, RFF} Annual specifications for the FMP species ^{P, Pr, RFF}	Establish quotas, recreational harvest limits, and other fishery regulations (commercial and recreational)	Indirect Positive Regulatory tool to specify catch limits, and other regulations; allows response to annual stock updates	Indirect positive Regulates fishing effort and can include measures to respond to bycatch	Indirect Slight Negative Allows continuation of fishing effort that prevents recovery of degraded habitats	Indirect Positive Regulated fishing effort; gear requirements	Indirect Positive Benefited domestic businesses
^P Amendment 2 to the FMP	Established rebuilding schedule, commercial quotas, recreational harvest limits, size limits, gear restrictions, permits, and reporting requirements for summer flounder; Created the Summer Flounder Monitoring Committee.	Direct Positive Regulatory tool available to rebuild and manage stocks and to regulate fishing effort	Indirect Positive Regulated fishing effort and gear use	Indirect Positive Reduced fishing effort; gear requirements	Indirect Positive Regulated fishing effort; gear requirements	Indirect Positive Benefited domestic businesses

FISHERY RELATED ACTIONS						
Action	Description	Impacts on Managed Resources	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
^P Frameworks 2 and 6 to the FMP ^P	Established state-specific and region-specific recreational conservation equivalency measures.	Indirect Positive Regulatory tool available to constrain recreational harvest	Indirect Positive Regulatory tool to constrain recreational harvest and effort impacting non-target species	Indirect Slight Negative Allows continuation of fishing effort that prevents recovery of degraded habitats	Likely Indirect Negative to Indirect Positive Maintains fishing effort; negatively impacting species with poor stock status and positively impacting stocks with positive stock status	Indirect Positive Allowed state/regional level flexibility in tailoring recreational measures
^P Amendment 10 to the FMP ^P	Modified commercial minimum mesh requirements; continued commercial vessel moratorium; prohibited transfer of summer flounder at sea; established party/charter permits for summer flounder.	Direct Positive Regulatory tool available to rebuild and manage stocks and to regulate fishing effort	Indirect Positive Regulated fishing effort and gear use	Indirect Slight Negative Allows continuation of fishing effort that prevents recovery of degraded habitats	Likely Indirect Negative to Indirect Positive Maintains fishing effort; negatively impacting species with poor stock status and positively impacting stocks with positive stock status	Direct slight negative to Indirect slight positive Imposed some costs and restrictions on fishing industry, but contributed to management of sustainable stock and benefitted some businesses

FISHERY RELATED ACTIONS						
Action	Description	Impacts on Managed Resources	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF Omnibus ACL/AMs amendment (Amendment 15)	Established Annual Catch Limits (ACLs) and Accountability Measures (AMs)	Direct Positive Regulatory tool available to rebuild and manage stocks and to regulate fishing effort	Direct Positive Regulatory tool available to rebuild and manage stocks and to regulate fishing effort	Indirect Slight Negative Allows continuation of fishing effort that prevents recovery of degraded habitats	Likely Indirect Negative to Indirect Positive Maintains fishing effort; negatively impacting species with poor stock status and positively impacting stocks with positive stock status	Indirect Negative to Indirect Positive Decreased fishing effort in some cases, but required sustainable management for long-term sustainable yield
P, Pr, RFF Omnibus Recreational AMs amendment	Modified the accountability measures for the Council's recreational fisheries	Indirect Slight Positive Added flexibility in managing stocks and to regulate fishing effort	Indirect Slight Positive Added flexibility in managing stocks and to regulate fishing effort	Indirect Slight Negative Allows continuation of fishing effort that prevents recovery of degraded habitats	Likely Indirect Negative to Indirect Positive Maintains fishing effort; negatively impacting species with poor stock status and positively impacting stocks with positive stock status	Indirect Slight Positive Allowed additional flexibility in responding to recreational overages, lessening required management restrictions
P, Pr, RFF Vessel baseline amendment (Amendment 18)	Removed some of the restrictions for upgrading vessels listed on Federal fishing permits	Indirect Slight Positive Allows management of fleet to regulate fishing effort	Indirect Slight Positive Allows management of fleet to regulate fishing effort	Indirect Slight Negative Allows continuation of fishing effort that prevents recovery of degraded habitats	Likely Indirect Negative to Indirect Positive Maintains fishing effort; negatively impacting species with poor stock status and positively impacting stocks with positive stock status	Indirect Slight Positive Allowed increased flexibility in vessel modifications

FISHERY RELATED ACTIONS						
Action	Description	Impacts on Managed Resources	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF Standardized Bycatch Reporting Methodology	Established acceptable level of precision and accuracy for monitoring of bycatch in fisheries	Indirect Slight Positive May improve data quality for monitoring total removals	Indirect Slight Positive May improve data quality for monitoring total removals	No impact Impacts monitoring of fishery but does not influence effort or level of participation	Indirect Slight Positive May increase observer coverage and will not affect distribution of effort	Uncertain – Likely Indirect Negative May impose an inconvenience on vessel operations
P, Pr, RFF Unmanaged Forage Omnibus Amendment	Prohibits development of new and expansion of existing directed commercial fisheries on unmanaged forage species in MAFMC waters until the Council can consider available scientific information and potential impacts	Indirect Positive Is intended to protect the food source for a variety of species in the Mid-Atlantic	Indirect Positive Is intended to protect the food source for a variety of species in the Mid-Atlantic	Indirect Slight Negative Allows continuation of fishing effort that prevents recovery of degraded habitats	Indirect Positive Intended to protect the food source for a variety of species in the Mid-Atlantic including protected resources	Mixed Could have positive impacts by maintaining a food source for several fish stocks. Could have negative impacts for fishermen who already harvest unmanaged forage species.
RFF Recreational Issues Framework and Addendum	Will consider adding slot limits, transit provisions for Block Island, and conservation equivalency for black sea bass	Likely Indirect Positive Will introduce new tools to manage stock to sustainable harvest levels	Likely Indirect Positive Will maintain non-target species at sustainable harvest levels	Indirect Slight Negative Allows continuation of fishing effort that prevents recovery of degraded habitats	Likely Indirect Negative to Indirect Positive Maintains effort at current levels; negatively impacting species with poor stock status and positively impacting stocks with positive stock status	Likely Indirect Slight Positive Will introduce management tools that may improve access to the resource and angler satisfactions

FISHERY RELATED ACTIONS						
Action	Description	Impacts on Managed Resources	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
^{RF} Omnibus Observer Coverage Amendment	Measures to implement industry-funded monitoring coverage in some FMPs above levels required by SBRM	Likely Indirect Positive May improve monitoring and reporting for managed resources	Likely Indirect Positive May improve monitoring and reporting for non-target resources	Uncertain – Likely No Impact Depending on actions implemented, will not likely result in significant changes to fishing access or effort	Likely Indirect Positive May improve monitoring and reporting for protected resources interactions	Likely Direct Negative Likely to impose additional costs on fishing operations
^{P, Pr, RF} Convening of Take Reduction Teams (periodically)	Recommend measures to reduce mortality and injury to marine mammals and sea turtles	Indirect Positive Will improve data quality for monitoring total removals; Gear requirements could reduce bycatch	Indirect Positive Will improve data quality for monitoring total removals; Gear requirements could reduce bycatch	Indirect Positive Gear requirements could reduce gear impacts	Direct Positive Reducing amount of gear in water could reduce encounters	Indirect Negative Gear requirements could reduce revenues
^{RF} Summer flounder recreational issues and sector allocation amendment	Will consider recreational/commercial sector allocation and consider revisions to recreational management strategies	Likely Indirect Positive Will allow for continued management to sustainable harvest levels and modernize some management strategies	Likely Indirect Positive Likely to maintain or possibly reduce non-target species interactions	Indirect Slight Negative Allows continuation of fishing effort that prevents recovery of degraded habitats	Likely Indirect Negative to Indirect Positive Maintains effort at current levels; negatively impacting species with poor stock status and positively impacting stocks with positive stock status	Mixed Will positively impact some human communities and negatively impact others by modifying access to the resource

FISHERY RELATED ACTIONS						
Action	Description	Impacts on Managed Resources	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
Pr, RFF Revisions to commercial AMs	Adds additional flexibility in commercial AMs based on stock status	Indirect Slight Positive Adds flexibility in managing stocks and to regulate fishing effort	Indirect Slight Positive Adds flexibility in managing stocks and to regulate fishing effort	Indirect Slight Negative Allows continuation of fishing effort that prevents recovery of degraded habitats	Likely Indirect Negative to Indirect Positive Maintains fishing effort; negatively impacting species with poor stock status and positively impacting stocks with positive stock status	Indirect Positive Will increase flexibility in response to ACL overages, making responses less burdensome to fishing industry

NON-FISHERY RELATED ACTIONS						
Action	Description	Impacts on Managed Resources	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF Agriculture runoff	Nutrients applied to agriculture land are introduced into aquatic systems	Indirect Negative Reduced habitat quality in the immediate project area	Indirect Negative Reduced habitat quality in the immediate project area	Direct Negative Reduced habitat quality in the immediate project area	Indirect Negative Reduced habitat quality in the immediate project area	Indirect Negative Reduced habitat quality negatively affects resource viability in the immediate project area
P, Pr, RFF Port maintenance	Dredging of wetlands, coastal, port and harbor areas for port maintenance	Indirect Negative Localized decreases in habitat quality	Indirect Negative Localized decreases in habitat quality	Direct Negative Reduced habitat quality in the immediate project area	Indirect Negative Localized decreases in habitat quality in the immediate project area	Indirect Negative Reduced habitat quality negatively affects resource viability in the immediate project area

NON-FISHERY RELATED ACTIONS						
Action	Description	Impacts on Managed Resources	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF Offshore disposal of dredged materials	Disposal of dredged materials	Indirect Negative Localized decreases in habitat quality in the immediate project area	Indirect Negative Localized decreases in habitat quality in the immediate project area	Direct Negative Reduced habitat quality in the immediate project area	Indirect Negative Localized decreases in habitat quality in the immediate project area	Indirect Negative Reduced habitat quality negatively affects resource viability in the immediate project area
P, Pr, RFF Beach nourishment	Offshore mining of sand for beaches	Indirect Negative Localized decreases in habitat quality in the immediate project area	Indirect Negative Localized decreases in habitat quality in the immediate project area	Direct Negative Reduced habitat quality in the immediate project area	Indirect Negative Localized decreases in habitat quality in the immediate project area	Mixed Positive for mining companies, possibly negative for fisheries
	Placement of sand to nourish beach shorelines	Indirect Negative Localized decreases in habitat quality in the immediate project area	Indirect Negative Localized decreases in habitat quality in the immediate project area	Direct Negative Reduced habitat quality in the immediate project area	Indirect Negative Localized decreases in habitat quality in the immediate project area	Positive Beachgoers generally like sand
P, Pr, RFF Marine transportation	Expansion of port facilities, vessel operations and recreational marinas	Indirect Negative Localized decreases in habitat quality in the immediate project area	Indirect Negative Localized decreases in habitat quality in the immediate project area	Direct Negative Reduced habitat quality in the immediate project area	Indirect Negative Localized decreases in habitat quality in the immediate project area	Mixed Positive for some interests, potential displacement for others
P, Pr, RFF Installation of pipelines, utility lines and cables	Transportation of oil, gas and energy through pipelines, utility lines and cables	Unknown Dependent on mitigation effects	Unknown Dependent on mitigation effects	Potentially Direct Negative Reduced habitat quality in the immediate project area	Unknown Dependent on mitigation effects	Unknown Dependent on mitigation effects

NON-FISHERY RELATED ACTIONS						
Action	Description	Impacts on Managed Resources	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
^{RFF} Liquefied Natural Gas (LNG) terminals (w/in 5 years)	Transportation of natural gas via tanker to terminals located offshore and onshore (Several LNG terminals are proposed, including MA, RI, NY, NJ and DE)	Unknown Dependent on mitigation effects	Unknown Dependent on mitigation effects	Potentially Direct Negative Localized decreases in habitat quality possible in the immediate project area	Unknown Dependent on mitigation effects	Unknown Dependent on mitigation effects
^{RFF} Offshore Wind Energy Facilities (medium probability w/in 5 years)	Construction of wind turbines to harness electrical power (Several facilities proposed from ME through NC, including off the coast of MA, NY/NJ and VA)	Unknown Dependent on mitigation effects	Unknown Dependent on mitigation effects	Potentially Direct Negative Localized decreases in habitat quality possible in the immediate project area	Unknown Dependent on mitigation effects	Unknown Dependent on mitigation effects

Summary Effects of Past and Present Actions

The present conditions of the VECs are empirical indicators of the summary effects of past actions since, independent of natural processes, and these present conditions are largely the product of these past actions. The combined effects of these actions are described in the VEC-by VEC discussion below and are summarized in Table 60.

Managed Species

The cumulative impacts of past and present management actions have resulted in overall positive impacts to the managed resource. Summer flounder stock biomass has trended up over the long term, recovering from population lows in the late 1980s/early 1990s. Although biomass has decreased slightly in recent years, management measures have maintained the population above an overfished condition. The age structure of the population has expanded as the result of minimum size and minimum mesh size requirements and other management measures, contributing to a more sustainable population. Foreseeable future management measures are expected to prevent overfishing and prevent the stock from becoming overfished, and allow for continued stock recovery.

While the negative effects of past and present actions associated with non-fishing activities (Table 59) may have increased negative effects, it is likely that those actions were minor due to the limited scale of the habitat impact compared with the populations at large.

Therefore, the cumulative impacts of past and present actions should yield positive impacts for managed species in the long term.

Non-target Species

Actions taken by the Council in the Summer Flounder, Scup, and Black Sea Bass FMP in the past and present are mostly positive on non-target species. Specific gear and area restrictions have reduced bycatch of various non-target species. Effort controls and increased efficiency of the fleet have also likely reduced impacts on non-target species. As described in section 6.2, most of the major relevant non-target species in the commercial summer flounder fishery have a positive stock condition, with the exceptions of thorny skate (overfished) and Northern sea robin (unknown). While there are no sub-ACLs for other species in the commercial summer flounder fishery, most of the non-target species are managed by the MAFMC and/or the NEFMC and are managed under their own ACLs and AMs, which will continue to promote the health of each stock. Future actions are anticipated to continue rebuilding and maintaining sustainable stocks. Therefore, the cumulative impacts of the past and present actions should yield positive impacts for non-target species in the long-term.

The summary effects of past and present actions are less certain than for the managed resources. This is because the information needed to quantitatively measure the impacts on these species resulting from summer flounder fishery activities and non-fishing activities is generally lacking. The continued implementation of the Omnibus SBRM Amendment is expected to provide more data to allow management to better manage bycatch. The summary effects of past and present actions on non-target species are considered to be a mixed set of partially offsetting positive effects through fishery effort reduction or gear modifications will, in effect, reduce the magnitude of the negative impacts of fishing in general. This would likely improve with future actions to reduce bycatch. Again, although the negative effects of past and present actions associated with non-

fishing activities (Table 59) may have increased negative effects, it is likely that the impacts of those actions have been minor due to the limited scale of the habitat impact compared with the populations at large.

Therefore, the cumulative impacts of past and present actions should yield positive impacts for non-target species in the long term.

Habitat

The summer flounder fishery is dominated by otter trawls, accounting for over 90% of commercial landings. Other minor gear types include gill nets, traps, hook and line, and dredge gear (with dredge gear accounting for mostly incidental landings of summer flounder). Due to the very small percentage of non-trawl gear types used in the commercial summer flounder fishery, and the minimal impacts of hook and line gear on habitat (see section 6.3), the impacts of past, present, and future FMP actions are primarily focused on the bottom trawl fishery rather than on other gear types.

Trawl gear can have negative impacts on habitat by creating furrows in sediments, re-suspending and dispersing sediments, reducing the abundance of benthic prey species. The summer flounder fishery takes place predominantly in dynamic environments with less structured bottom composition, where habitat impacts are more likely to be shorter in duration.

The Mid-Atlantic Council developed some fishery management actions with the sole intent of protecting marine habitats. For example, in Amendment 9 to the Mackerel, Squids, and Butterfish FMP, the Council determined that bottom trawls used in Atlantic mackerel, longfin and *Illex* squid, and butterfish fisheries have the potential to adversely affect EFH for some federally-managed fisheries (MAFMC 2008). As a result of Amendment 9, closures to squid trawling were developed for portions of Lydonia and Oceanographer Canyons. Subsequent closures were implemented in these and Veatch and Norfolk Canyons to protect tilefish EFH by prohibiting all bottom trawling activity. In addition, amendment 16 to the Mackerel, Squid, and Butterfish FMP prohibits the use of all bottom-tending gear in fifteen discrete zones and one broad zone where deep sea corals are known or highly likely to occur (81 Federal Register 90246, December 14, 2016).

Actions implemented in the Summer Flounder, Scup, and Black Sea Bass FMP that affected species with overlapping EFH were considered Amendment 13 (MAFMC 2002). The analysis in Amendment 13 indicated that no management measures were needed to minimize impacts to EFH because the trawl fisheries for summer flounder, scup, and black sea bass in Federal waters are conducted primarily in high energy mobile sand and bottom habitat where gear impacts are minimal and/or temporary in nature. The principal gears used in the recreational fisheries for summer flounder are rod and reel and handline. These gears have minimal adverse impacts on EFH in the region (Stevenson et al. 2004).

Overall, the combination of past and present actions is expected to provide some protection for vulnerable benthic habitats, and continue to promote efficiency in the harvest of fishery resources, thereby reducing adverse effects of fishing on EFH. Such consultations aim to reduce the negative habitat impacts associated with various activities occurring in the marine environment. However, despite these mitigation measures, it is likely that fishing and non-fishing activities will continue to degrade habitat quality and prevent recovery of degraded habitats.

Therefore, the cumulative impacts of past and present actions should yield mixed impacts for habitat in the long term.

Protected Species

Those past, present, and reasonably foreseeable future actions which may impact protected species, and the direction of those impacts, are summarized in Table 59. The primary protected species impacted by the fishery include whales (North Atlantic right whale, humpback whale, fin whale, sei whale, minke whale, pilot whale), small cetaceans (Risso's dolphin, Atlantic white-sided dolphin, short beaked common dolphin, bottlenose dolphin, harbor porpoise), sea turtles (leatherback, Kemp's ridley, green, loggerhead), pinnipeds (harbor seal, gray seal, harp seal, hooded seal) and fish (Atlantic salmon, Atlantic sturgeon).

NMFS has several means under which it can review non-fishing actions of other Federal or state agencies that may impact protected species prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on protected species under NMFS' jurisdiction.

Past fishery management actions taken through the respective FMPs and annual specifications process have had a positive cumulative effect on protected species through the reduction of fishing effort (and thus reduction in potential interactions) and implementation of gear requirements. It is anticipated that future management actions, described in Table 59, will result in additional indirect positive effects on protected species. These impacts could be broad in scope. In addition, Take Reduction Teams have been convened to develop measures for certain marine mammal species that have generally reduced interactions over time.

Since modifications to MAFMC management actions will occur through framework adjustments and plan amendments, they will undergo additional review to assess protected species.

Overall, the cumulative impacts of the past and present actions are positive for protected resources, due to reduced gear action with species of concern.

Human Communities

All actions taken under the Summer Flounder, Scup, and Black Sea Bass FMP have had effects on human communities. None have specifically been developed to primarily address elements of fishing related businesses and communities, but many actions have included specific measures designed to improve flexibility and efficiency. In general, actions that prevent overfishing have long-term economic benefits on businesses and communities that depend on those resources; however, many actions may lead to short-term negative economic impacts by reducing effort.

In particular, the development of ACLs and AMs and associated annual specifications have resulted in constraints on effort and revenues in the fishery, but annual catch limits and other measures have resulted in positive impacts on the stock that will positively impact human communities in the future. Amendments 2 and 10 had major implications for human communities, by limiting participation and allocating the resource by state, and imposing other gear and permitting requirements. These major actions resulted in mixed impacts to human communities, by imposing costs and eliminating some participants, but improving management's ability to control harvest and maintain positive biological conditions for the stock. Frameworks 2 and 6 for the recreational fishery provided overall positive benefits to human communities by allowing for increased management flexibility within the constraints of annual catch limits.

While short-term negative impacts may follow an action that reduces effort, past and present actions had positive cumulative impacts on vessel owners, crew, and their families in the summer flounder fishery by increasing their fishing revenues, incomes, and standards of living. The impacts of these past and present actions were also positive for the related sectors including dealers, processors, primary suppliers, to the vessels that sell them gear, engines, boats, etc. The increase in gross profits for summer flounder vessels and in crew incomes have had positive economic benefits on these sectors indirectly through the multiplier impacts. In general, revenues and price have increased over time. Future actions are expected to continue this trend. Therefore, the cumulative impacts of past and present actions are positive for human communities.

The summary effect of past and present actions is complex since the effects have varied among fishery participants, consumers, and communities. Nevertheless, the net effect is considered to be positive in that the fisheries managed under the Summer Flounder, Scup, and Black Sea Bass FMP currently support viable domestic and international market demand. While some short-term economic costs have been associated with effort reductions and gear modifications (Table 59), economic returns have generally been positive and as such, have tended to make a positive contribution to the communities associated with the harvest of these species.

Summary Effects of Future Actions

As with past and present actions, the list of reasonably foreseeable future actions is provided in Table 59. Additionally, the same general trends will be noted with regard to the expected outcomes of fishery related actions and non-fishing actions, the summary effects of fishery related actions tend to be positive with respect to natural resources though short-term negative or mixed effects are expected for human communities. Conversely, for the non-fishing actions listed in Table 59, the general outcome remains negative in the immediate project area, but minor for all VECs again due to the difference in scale of exposure of the habitat perturbation and the population. The directionality of impacts of future actions on the VECs will necessarily be a function of the offsetting negative vs. positive impacts of each of the actions. Since the magnitude and significance of the impacts of these future actions, especially non-fishing impacts, is poorly understood, conclusions as to the summary effects will essentially consist of an educated guess.

Recall that the future temporal boundary for this CEA is five years after full implementation of the amendment (~2024, section 7.4.2). Within that timeframe, the summary effects of future actions on managed resources, non-target species, habitat, and protected resources are all expected to be positive, notwithstanding the localized nearshore negative effects of non-fishing actions. The optimization of the conditions of the resources is the primary objective of the management of these natural resources. Additionally, it is unknown, but expected that technology to allow for mitigation of the negative impacts of non-fishing activities will improve.

For human communities, short-term (i.e., within the temporal scope of this CEA) costs may occur. This negative impact is expected to be the byproduct of an adjustment to the improved management of natural resources. In the longer term, positive impacts on human communities should come about as sustainability of natural resources is attained.

In terms of FMP-specific actions expected to be implemented before 2020, other than the continuation of specifications, the only known FMP modification for summer flounder, scup, and black sea bass expected is a framework action to increase flexibility in recreational fisheries management for summer flounder, scup, and black sea bass. This action is expected to have

positive impacts on target and non-target species, would maintain the current conditions of habitat and protected resources, and would have mostly positive impacts on human communities.

For longer-term actions under the FMP for summer flounder, scup, and black sea bass, the MAFMC will begin development of a summer flounder amendment to re-evaluate the commercial/recreational allocation, as well as to consider modifications to recreational management strategies. This action will be initiated following implementation of this Commercial Issues Amendment, and is expected to result in positive impacts on non-target species. Similar to this action, this future amendment is expected to maintain the current condition of habitat, and will have uncertain impacts on protected resources and likely mixed impacts on human communities. It is possible that the MAFMC will develop a black sea bass amendment addressing similar issues, which would have similar impacts on each VEC as those described for the future summer flounder amendment.

A summary of the cumulative impacts of past, present, and reasonably foreseeable future actions on each VEC is provided in Table 60.

Table 60: Summary of expected impacts of combined past, present, and reasonably foreseeable future actions on each VEC.

VEC	Past Actions (P)	Present Actions (Pr)	Reasonably Foreseeable Future Actions (RFFA)	Combined Effects of Past, Present, Future Actions
Managed Resources	Positive Combined effects of past actions have decreased effort, improved habitat protection	Positive Current regulations continue to manage for a sustainable stock	Positive Future actions are anticipated to strive to maintain a sustainable stock	Positive Stocks are being managed sustainably
Non-Target Species	Positive Combined effects of past actions have decreased effort and reduced bycatch	Positive Current regulations continue to decrease effort/increase efficiency and reduce bycatch	Positive Future regulations are being developed to improve monitoring and address bycatch issues	Low positive Decreased effort/increased efficiency and reduced bycatch continue; most non-target stocks continue to be sustainably managed under ACLs/AMs
Habitat	Mixed Combined effects of effort reductions and better control of non-fishing activities have been positive, but fishing activities and non-fishing activities have reduced habitat quality	Mixed Effort reductions and better control of non-fishing activities have been positive but fishing activities continue to reduce habitat quality	Mixed Future regulations will likely control effort and habitat impacts but as stocks improve, effort may increase along with additional non-fishing activities	Mixed Continued fisheries management will likely control effort and thus fishery related habitat impacts but fishery and non-fishery related activities will continue to reduce habitat quality
Protected Resources	Positive Combined effects of past fishery actions have reduced effort and thus interactions with protected resources	Positive Current regulations continue to control effort, thus reducing opportunities for interactions	Mixed Future regulations will likely control effort and thus protected species interactions, but as stocks improve effort will likely increase, possibly increasing interactions	Positive Continued effort controls along with past regulations will likely help stabilize protected species interactions
Human Communities	Mixed Management actions have imposed requirements that reduced short-term revenues and increased costs, however, stock improvements have led to community benefits and in the long term	Mixed Management actions continue to constrain effort, at times reducing short-term revenues, however, stock improvements continue to benefit human communities in the long term; price and revenues are generally increasing	Mixed Future regulations will likely control effort and thus reduce revenues at times, but long-term maintenance of sustainable stock will lead to long-term benefits to human communities	Mixed Continued fisheries management will impose requirements that may reduce short-term revenues or increase costs; sustainable management should improve community benefits in long-term

7.4.4 Baseline Condition for the Resources, Ecosystems, and Human Communities

For the purposes of this CEA, the baseline condition is considered as the present condition of the VECs plus the combined effects of the past, present, and reasonably foreseeable future actions.

Table 61 summarizes the added effects of the condition of the VECs (i.e., status/trends/stresses from Section 6 and Table 59) and the sum effect of the past, present, and reasonably foreseeable future actions (from Table 60). The resulting CEA baseline for each VEC is exhibited in the last column of

Table 61 (shaded). In general, only qualitative metrics are available for the VECs. For managed species, the baseline condition is likely positive given the continued fisheries that target and catch the managed species. For non-target species, none of the relevant species identified in section 6.2 are overfishing (although the Northern sea robin stock is unassessed, and the status is unknown). Black sea bass, scup, spiny dogfish, and species within the Northeast skate complex are not overfished with the exception of thorny skate; the status of sea robins is unknown. The conditions of the habitat and human communities VECs are complex and varied. As such, the reader should refer to the characterizations given in Sections 6.3 and 6.5, respectively. For protected resources the baseline is negative in the short run given continued interaction but should be positive in the long run as additional mitigations are implemented. As mentioned above, the CEA Baseline is then used to assess cumulative effects of the proposed management actions.

Table 61: Summary of the current status, combined effects of P,PR,RFF actions, and the combined baseline condition of each VEC.

VEC	Status and Trends	Combined Effects of Past, Present, and Reasonably Foreseeable Future Actions (Table 60)	Combined CEA Baseline Conditions
Managed Resource	Not overfished, overfishing occurring as of 2015 fishing year. Biomass trending down since 2011.	Positive Stocks are being managed sustainably	Positive Stocks are being managed sustainably
Non-target Species	Black sea bass, scup, spiny dogfish are not overfished/overfishing is not occurring. No stocks in Northeast skate complex are experiencing overfishing and none are overfished except thorny skate. Status of Northern sea robin is unknown.	Low positive Decreased effort and reduced bycatch continue; most non-target stocks continue to be sustainably managed under ACLs/AMs	Low positive Decreased effort and reduced bycatch continue; most non-target stocks are not overfished/not overfishing
Habitat	Fishing impacts are complex and variable and typically adverse (see section 6.3); Non-fishing activities have had historically negative but site-specific effects on habitat	Mixed Continued fisheries management will likely control effort and thus fishery related habitat impacts but fishery and non-fishery related activities will continue to	Low positive Continued fisheries management will likely control effort and thus fishery related habitat impacts; recovery will be limited, but overall knowledge of and

VEC	Status and Trends	Combined Effects of Past, Present, and Reasonably Foreseeable Future Actions (Table 60)	Combined CEA Baseline Conditions
		reduce habitat quality and/or prevent recovery	protection of key habitats continues to improve
Protected Resources	Sea Turtles: Endangered or threatened under ESA Large whales: Some endangered under ESA, all protected under MMPA Small cetaceans and pinnipeds: protected under MMPA Atlantic salmon (Gulf of Maine DPS): threatened under ESA Atlantic sturgeon: New York Bight, Chesapeake, Carolina, and South Atlantic DPSs are endangered under ESA	Positive Continued effort controls along with past regulations will likely help stabilize protected species interactions	Positive Stocks are being managed for sustainability, but some in poor status. Reduced gear encounters through effort reductions and additional management actions taken under ESA/MMPA.
Human Communities	Complex and variable. Landings have since 2011 due to declining stock biomass and catch limits. From 2012-2016, commercial ex-vessel value averaged \$28 million per year. 766 commercial moratorium permits were issued in 2017, with 332 reporting summer flounder landings. 19 ports from MA through NC have averaged over 100,000 lb of summer flounder landings annually from 2012-2016. Over 200 federally-permitted dealers from Maine through North Carolina purchased summer flounder in 2016.	Mixed Continued fisheries management will likely control effort and thus fishery related habitat impacts but fishery and non-fishery related activities will continue to reduce habitat quality	Positive Short term negative impacts occur from effort limitations, but long-term positive conditions result from higher prices and continued management under ACLs and AMs. Resource supports viable communities and economies.

Managed Resource Impacts CEA Baseline

The summer flounder stock is currently not overfished but is experiencing overfishing as of 2015 (the most recent year of data available for overfishing status). Biomass has generally been declining since 2011, although the stock has not reached the overfished threshold. Despite this trend, generally catch has not been exceeding the implemented ACLs, and overfishing has been largely resulting from several years of below average recruitment and a retrospective pattern in the stock assessment. Managers continue to adapt to changing scientific information to set catch limits to prevent overfishing and overfished status. In general, the stock is being managed for continued sustainability and the **baseline condition of the managed resource is positive.**

Non-target Species Impacts CEA Baseline

In general, interactions with non-target species in the commercial summer flounder fishery do not presently have a major impact on non-target stock status. Removals of these species as the result of the summer flounder fishery are generally low relative to their total removals. Most non-target species caught in this fishery have a positive stock status (with the exception of thorny skate, which is overfished, and Northern sea robin, which is unknown) and most are managed under ACLs and AMs to control and account for their total removals.

Incidental catch in the fishery is regularly monitored, and measures may be put in place to address any problematic increases in non-target bycatch that may occur. As mentioned above, non-fishing effects, although potentially negative to all fish species, are likely not exerting much negative effects on non-target species, due to the small scale of the habitat perturbation relative to the populations at large.

Overall, the baseline condition of the non-target species is positive as most non-target species have a positive stock condition and are managed for sustainability. Incidental catch is monitored and bycatch in the summer flounder fishery does not appear to be heavily influencing stock status at present.

Habitat Impacts CEA Baseline

For habitat, the summary effects of past and present actions assessed above in section 7.4.3 were considered to be low positive. Effort reduction or gear modifications will, in effect, reduce the magnitude of the direct negative impact on this VEC that results from fishing activities. Again, although the negative effects of past and present actions associated with non-fishing activities (Table 59) may have increased negative effects, it is likely that those actions were minor due to the limited scale of the habitat impact compared with the populations at large. Considering fishing effort over the next 5 years will likely remain similar to current levels, a resultant low positive impact on the habitat of “other” actions is anticipated. **Overall, the baseline condition of habitat is low positive**, due the combination of overall effort reductions reducing the extent of negative interactions with habitat, and continued advancement of the knowledge of and protection of important habitats.

Protected Resource Impacts CEA Baseline

For the protected species affected by this Amendment (listed in Section 6.4), the summary effects of the “other” past and present actions assessed above were considered to be negative in the short term but positive in the long term due to future effort reduction or gear modifications (gear modifications lessen the negative impact of a given level of effort). There are no currently planned actions that would directly reduce the mortality of protected resources from encounters with the summer flounder fishery.

Current and future actions and the current protection under MMPA and ESA are expected to result in positive cumulative impacts for these protected resources. Overall, while negative impacts occur in the short term due to fishery interactions, **the baseline condition of protected resources is positive over the long term** due to effort reduction and other efforts to reduce gear interactions.

Human Communities Impacts CEA Baseline

The net effect of past and present “other” actions is considered to be positive in that the fisheries managed under the FSB FMP currently support viable domestic and international market demand.

While some short-term economic costs have been associated with effort reductions and gear modifications (See Table 59), economic returns have generally been positive and as such, have tended to make a positive contribution to the communities associated with harvest of these species. In the short-term future (i.e., within the temporal scope of this CEA), costs may occur. The negative impact is expected to be the byproduct of an adjustment to the improved management of natural resources. In the longer term, positive impacts on human communities should come about as sustainability of natural resources is attained. **Overall, the baseline condition of human communities is uncertain but generally positive in the long term.**

7.4.5 Magnitude and Significance of Cumulative Effects

Determining the magnitude of the cumulative effects consists of determining the separate effects of the past actions, present actions, the proposed action (and reasonable alternatives), and other future actions. Once that is done, cumulative effects can be described. The significance of the effects is related to the magnitude, but also takes into account context distribution. Table 59 in section 7.4.3 lists the effects of individual past, present, and future actions to assist the reader in understanding the conclusions presented below regarding the summary effects of these separate actions. Note that fishery-related activities consist almost entirely of positive effects (with the exception of some short term negative effects on human communities) while non-fishing activities are generally associated with negative effects. This is not to say that some aspects of various VECs are not experiencing negative impacts, but rather that when taken as a whole and compared to the level of unsustainable effort that existed prior to and just after the fishery came under management control, the overall long-term trend is positive. The basis for this general outcome is explained in the text provided in section 7.4.3. Table 60 and associated text describes the summary effects of the past, present, and future actions on the VECs.

Summary Incremental Impacts of the Proposed Actions

The impacts of the proposed actions are described in Section 7 and summarized in the executive summary. Since the impact of every alternative on every VEC is described in those sections, they are not repeated here. For the Final EIS the incremental impacts of the preferred alternatives will be repeated here but there are no preferred alternatives yet.

Summary Cumulative Effects of the Proposed Actions

The cumulative effects of the proposed actions are strongly dependent on which combinations of actions are ultimately implemented. Once preferred alternatives have been selected a summary effects comparison will be made. However, regardless of which actions are ultimately implemented through this amendment, it is expected that the overall long-term cumulative effects should be positive for all VECs. This is because, barring some unexpected natural or human induced catastrophe, the regulatory atmosphere within which Federal fishery management operates requires that management actions be taken in a manner that will optimize the conditions of resources, habitat, and human communities. Consistent with NEPA, the MSA, requires that management actions be taken only after consideration of impacts to the biological, physical, economic, and social dimensions of the human environment. The document functions to identify the likely outcomes of various management alternatives. Identification of alternatives that would compromise resource sustainability should make implementation of those alternatives unlikely. With this in mind, the expected likely cumulative impacts for the VECs are described below. While again, the final selection of alternatives are not known, all of the alternatives in this document are geared toward goals of improved management of summer flounder. Assuming that some

alternatives are ultimately selected, and the ones that are selected are those predicted to have positive impacts as described above in section 7, there should be positive impacts related to the above goals.

To determine the magnitude and extent of cumulative impacts of the alternatives, the incremental impacts of the direct and indirect impacts should be considered, on a VEC-by-VEC basis, in addition to the effects of all actions (those effects identified and discussed relative to the past, present, and reasonably foreseeable future actions of both fishing and non-fishing actions).

Table 62 provides a summary of likely cumulative effects found in the various groups of management alternatives contained in this Amendment. The CEA baseline that, as described above in Table 61, represents the sum of past, present, and reasonably foreseeable future (identified hereafter as “other”) actions and conditions of each VEC. When an alternative has a positive impact on the VEC, for example, reduced fishing mortality on a managed species, it has a positive cumulative effect on the stock size of the species when combined with “other” actions that were also designed to increase stock size. In contrast, when an alternative has negative effects on a VEC, such as increased mortality, the cumulative effect on the VEC would be negative and tend to reduce the positive effects of the other actions. The resultant positive and negative cumulative effects are described below for each VEC.

Table 62: Summary of cumulative impacts expected on the VECs.

Management measures	Target species (summer flounder)	Non-target species	Habitat/EFH	Protected Resources	Human communities
Federal permit requalification	Slight positive: Contributes to managing for a sustainable stock	Slight positive: Contributes to maintaining positive stock status for non-target species	No impact: Measures are not expected to create additional impacts on habitat	Slight positive: Measures will contribute to overall trend of reduced takes	Mixed: Cumulative effects will vary by community
Commercial allocation	Slight positive: Contributes to managing for a sustainable stock	Slight positive: Contributes to maintaining positive stock status for non-target species	No impact: Measures are not expected to create additional impacts on habitat	Slight positive: Measures will contribute to overall trend of reduced takes	Mixed: Cumulative effects will vary by community
Landings flexibility framework provisions	Slight positive: Contributes to managing for a sustainable stock	Slight positive: Contributes to maintaining positive stock status for non-target species	No impact: Measures are not expected to create additional impacts on habitat	Slight positive: Measures will contribute to overall trend of reduced takes	Mixed: Cumulative effects will vary by community

Cumulative Managed Resources Impacts

As noted in Table 59, the combined impacts of past federal fishery management actions have increased summer flounder biomass and increased the resilience of the stock, for example, by allowing the age structure of the stock to expand relative to its truncated status in earlier years. For the most part, the actions proposed by this amendment are expected to have slight positive impacts and continue the sustainability of the summer flounder resource.

Past fishery management actions taken through FMP and the annual specifications process have had a positive cumulative effect on managed resources. It is anticipated that the future management actions described in Table 59 will have additional indirect positive effects on the managed resources through actions which reduce and monitor bycatch, protect habitat, and protect the ecosystem services on the productivity of managed species depends. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to the managed resources have had positive cumulative effects.

Catch limits, commercial quotas, and recreational harvest limits for summer flounder have been specified to ensure that the rebuilt stocks are managed sustainably and that measures are consistent with the objectives of the FMP under the guidance of the MSA. The impacts of annual specification of management measures are largely dependent on how effective those measures are in meeting the objectives of preventing overfishing and achieving optimum yield, and on the extent to which mitigating measures are effective. The proposed actions described in this document would positively reinforce the past and anticipated positive cumulative effects on the managed resources individually or in conjunction with other anthropogenic activities (Table 59). The impacts of this action (all permit requalification and reallocation alternatives) are expected to result in moderate positive impacts to summer flounder by maintaining the current positive stock status (sections 7.1.1 and 7.2.1).

The CEA baseline for managed resources is likely positive (Table 61). While the stock biomass has decreased somewhat in recent years, the stock remains above an overfished status, and catch limits are continually implemented based on the best available scientific information in order to prevent overfishing.

The past and present impacts, combined with any alternatives from the proposed alternatives and future actions which are expected to build stock biomass to target levels and strive to maintain sustainable stocks, should continue to yield non-significant positive impacts to the managed resources in the long term.

Cumulative Non-target Species Impacts

As noted in Table 59, the combined impacts of past federal fishery management actions have decreased effort and improved habitat protection, which benefits non-target species. In addition, current regulations continue to manage for sustainable stocks, thus control effort on direct and discard/bycatch species. The actions proposed by this amendment are expected to continue this trend. Finally, future actions are anticipated to continue rebuilding and thus limit the take of discards/bycatch in the summer flounder fishery, particularly through ACL management with AMs. Continued management of directed stocks will also control catch of non-target species. In addition, the effects of non-fishing activities on bycatch are potentially negative.

The CEA baseline for non-target resources is low positive (see Table 61). The provisions considered in this amendment are expected to have no impact to small impacts on non-target species, resulting in overall slight negative to moderate positive impacts to non-target species depending on possible effort shifts. In general, the alternatives in this amendment are expected to maintain the current positive stock status for non-target species.

The past and present impacts, combined with any alternatives selected from the proposed alternatives and future actions which are expected to continue to minimize impacts to non-target species, should continue to reduce negative impacts to non-target species and produce no impact to slight positive cumulative impacts in the future.

Cumulative Habitat Impacts

As noted in Table 59, the combined impacts of past federal fishery management actions have had positive impacts on EFH. In addition, better control of non-fishing activities has also been positive for habitat protection. However, both fishing and non-fishing activities continue to decrease habitat quality. None of the measures in this amendment are expected to have substantial impacts on habitat or EFH.

Past fishery management actions taken through the FMP and annual specifications process have had positive cumulative effects on habitat. The actions have constrained fishing effort both at a large scale and locally and have implemented gear requirements, which may reduce impacts on habitat. As required under these FMP actions, EFH and Habitat Areas of Particular Concern were designated for the managed resources. It is anticipated that the future management actions described in Table 59 will result in additional direct or indirect positive effects on habitat through actions which protect EFH and protect ecosystem services on which these species' productivity depends. These impacts could be broad in scope. All the VECS are interrelated; therefore, the linkages among habitat quality, managed resources, and non-target species productivity, and associated fishery yields should be considered. For habitat, there are direct and indirect negative effects from actions which may be localized or broad in scope; however, positive actions that have broad implications have been, and will likely continue to be, taken to improve the condition of the habitat. Some actions, such as coastal population growth and climate change may indirectly impact habitat and ecosystem productivity; however, these actions are beyond the scope of NMFS and Council Management. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to habitat have had no impact to positive cumulative effects.

The proposed actions described in this document would not significantly change the past and anticipated cumulative effects on habitat and thus would not have any significant effect on habitat individually or in conjunction with other anthropogenic activities (Table 59). The impacts of this action (all permit requalification and reallocation alternatives) are expected to be indirect slight negative due to a continuation of current levels of fishing effort and as a result, prevention of habitat recovery in fished areas.

Overall, the combination of past, present, and future actions is expected to reduce fishing effort and hence reduce damage to habitat; however, it is likely that fishing and non-fishing activities will continue to degrade habitat quality and/or prevent habitat recovery. Thus, when the direct and indirect effects of the alternatives are considered in combination with all other actions (i.e., past, present, and reasonably foreseeable future actions), the cumulative effects should yield non-significant no impacts on habitat and EFH.

Cumulative Protected Resources Impacts

As noted in Table 59, the combined impacts of past federal fishery management actions have had positive effects on protected resources. Given their life history dynamics, large changes in protected species abundance over long time periods, and the multiple and wide-ranging fisheries management actions that have occurred, the cumulative impacts on protected species were evaluated over a long-time frame (i.e., from the 1980's through the present). While some protected species are doing better than others, overall the trend of stock condition for protected resources has improved over the long-term due to reductions in the number of interactions. Past fishery management actions taken through the respective FMPs and annual specifications process have contributed to this long-term trend toward positive cumulative effect on protected species through the reduction of fishing effort (and thus reduction in potential interactions) and implementation of gear requirements. It is anticipated that future management actions, described in Table 59 will result in additional indirect positive effects on protected species. These impacts could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to protected species have had a positive cumulative effect.

The proposed actions described in this document would not change the past and anticipated cumulative effects on protected species and thus would not have any significant effect on protected species individually or in conjunction with other anthropogenic activities (Table 59).

Continued fishing activity will continue to result in interactions with protected resources, potentially resulting in short-term negative impacts on these species, depending on their stock status. However, these fishing activities will continue to be regulated through FMPs and various federal agency actions to ensure that species of concern are protected.

Take reduction teams for marine mammals will continue to be convened and will continue to develop strategies and gear modifications for reducing interactions with protected marine mammals. Foreseeable future summer flounder FMP actions may have positive impacts on protected resources by reducing interaction rates with protected species.

Thus, when the direct and indirect effects of the alternatives are considered in combination with other actions (i.e. past, present, and reasonably foreseeable future actions), the cumulative effects should yield non-significant positive impacts on protected resources.

Cumulative Human Communities Impacts

As noted in Table 59 the past federal fishery management actions have had mixed but generally positive impacts on human communities over the long-term.

Past major fishery actions such as Amendment 2, Amendment 10, and Amendment 15 have had impacts that have varied by community and in some cases have had negative short-term impacts by reducing access to the fishery (through permitting, allocations, and other measures). However, in the long-term, these measures generally contribute to a management system designed to maintain a sustainable stock for the long-term benefits of human communities. Implementing a system of limited access, allocated quotas, and overall annual catch and landings limits has had overall positive long-term benefits to human communities by maintaining a positive stock condition and generally improving prices and stability of the resource over time. In general, revenues have tended to increase over time.

Past fishery management actions taken through the FMP and annual specifications process have had both positive and negative cumulative effects by benefiting domestic fisheries through sustainable fishery management practices while also sometimes reducing the availability of the resources to fishery participants. Sustainable management practices are, however, expected to yield broad positive impacts to fishermen, their communities, businesses, and the nation as a whole. It is anticipated that the future management actions described in Table 59 will result in positive effects for human communities due to sustainable management practices, although negative effects on the human communities could occur if management actions result in reduced revenues. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to human communities have had overall positive cumulative effects.

Catch limits, commercial quotas, and recreational harvest limits for summer flounder have been specified to ensure that these rebuilt stocks are managed in a sustainable manner and that management measures are consistent with the objectives of the FMPs under the guidance of the MSA. The impacts from annual specification of management measures on the managed species are largely dependent on how effective those measures are in meeting their intended objectives and the extent to which mitigating those measures are effective.

Overages may alter the timing of commercial fishery revenues such that revenues can be realized a year earlier. Impacts to some fishermen may be caused by unexpected reductions in their opportunities to earn revenues from commercial fisheries in the year during which the overages are deducted. For the commercial fishery, landings trends have generally been within 5% of the annual landings limits for the past 15 or more years, so generally any overage deductions for landings limits have been minor. While there have also been commercial ACL overages resulting in paybacks, these have been relatively small for summer flounder. The recreational fishery in some years has exceeded their harvest limit and/or their recreational ACL, resulting in short-term negative impacts resulting from necessary restrictions on recreational measures.

Despite the potential for negative short-term effects on human communities, positive long-term effects are expected due to the long-term sustainability of the managed stocks. Overall, the proposed actions described in this document would not change the past and anticipated cumulative effects on human communities and thus, would not have any significant effects on human communities individually or in conjunction with other anthropogenic activities (Table 59).

The direct and indirect effects of the measures under consideration in this amendment are expected to be mixed in the short term and low positive in the long-term compared to the No Action because while a redistribution of fishery access may impact some communities negatively and some communities positively, over the long-term the measures in this action are expected to contribute to a management program that balances the needs of many stakeholder groups with the health of the resource, and results in long-term stock benefits that will provide long-term social and economic benefits to human communities.

Therefore, net cumulative impacts of the proposed measures and past actions on revenues and economic benefits from the summer flounder fishery would be low positive compared to the No Action.

Thus, the overall effects of reasonably foreseeable future actions on the fishery-related businesses and communities are low positive. In addition, the effects of non-fishing activities on fishing-related businesses and communities are mostly potentially negative (Table 59).

In this proposed action, the impacts of federal permit requalification alternatives are expected to have impacts on human communities ranging from moderate negative to slight positive, due to restricted access for some participants and a limitation of competition for others. For allocation alternatives, the impacts will vary by state and community, but could range from high negative to high positive.

The CEA baseline for human communities is positive. In summary, when the direct and indirect effects of the alternatives are considered in combination with other actions (i.e., past, present, and reasonably foreseeable future actions), these actions yield potentially low positive impacts on the fishery-related businesses and communities.

8.0 CONSISTENCY WITH MAGNUSON-STEVENSON FISHERY CONSERVATION AND MANAGEMENT ACT

This section will be completed prior to finalization of this action to document compliance with the Magnuson Stevens Act, including the Magnuson National Standards, EFH provisions, and other provisions of the MSA.

9.0 OTHER APPLICABLE LAWS

This section will be completed prior to finalization of this action to document compliance with other applicable federal laws, including a summary of NEPA and ESA/MMPA compliance, as well as compliance with Coastal Zone Management Act, Administrative Procedures Act, Data Quality Act, Paperwork Reduction Act, Executive Order (E.O.)13132, E.O. 12866, and the Regulatory Flexibility Act.

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11.0 LIST OF AGENCIES AND PERSONS CONSULTED

In preparing this document the Council consulted with NMFS, the Atlantic States Marine Fisheries Commission, the New England and South Atlantic Fishery Management Councils, the U.S. Fish and Wildlife Service, Department of State, and the states of Maine through North Carolina through their membership on the Mid-Atlantic and New England Fishery Management Councils and the Atlantic States Marine Fisheries Commission. To ensure compliance with NOAA Fisheries formatting requirements, the advice of NOAA Fisheries GARFO personnel was sought.

12.0 LIST OF PREPARERS AND POINT OF CONTACT

This Environmental Impact Statement was prepared by Kiley Dancy of the Council staff, in consultation with other Council staff. This document was prepared and evaluated in consultation with the National Marine Fisheries Service, the Atlantic States Marine Fisheries Commission, and the New England Fishery Management Council. Members of the Summer Flounder Amendment Fishery Management Action Team (FMAT) prepared and reviewed portions of analyses and provided technical advice during the development of the EIS. Current and former members of the FMAT members include:

Agency	Fishery Management Action Team (FMAT) Role	Past and Current FMP Representative(s)
MAFMC	Council Staff (Plan Coordinator)	Kiley Dancy
ASMFC	Commission Staff (Plan Coordinator)	Kirby Rootes-Murdy
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NMFS GARFO	Sustainable Fisheries (Plan Coordinator)	Moira Kelly/Emily Gilbert
NMFS GARFO	NEPA	Katherine Richardson/ Marianne Ferguson
NMFS GARFO	Habitat	David Stevenson
NMFS NEFSC	Stock Assessment/Technical	Mark Terceiro
NMFS NEFSC	Socioeconomics	Scott Steinback
NMFS NEFSC	Socioeconomics	Gregory Ardini
NMFS GARFO	General Counsel (consulted as needed)	Kevin Collins/John Almeida

Questions about this environmental assessment or additional copies may be obtained by contacting Christopher Moore, PhD, Executive Director, Mid-Atlantic Fishery Management Council, 800 N. State Street, Dover, DE 19901 (302-674-2331). This Environmental Impact Statement may also be accessed by visiting the NMFS Greater Atlantic Region website at <http://www.greateratlantic.fisheries.noaa.gov/>.

13.0 APPENDIX A: STATE PERMIT REQUIREMENTS

States have varying requirements for summer flounder permits, as summarized below (information as of April 2017). Massachusetts

All persons who land and sell finfish in Massachusetts must have a commercial fishing permit from the Massachusetts Division of Marine Fisheries (MADMF) and must sell only to permitted Massachusetts dealers. A limited entry summer flounder (fluke) permit endorsement, in addition to a Massachusetts commercial fishing permit, is required for any individual and/or vessel to commercially fish for summer flounder within the state waters of Massachusetts, or to harvest, process, or land any summer flounder for commercial purposes in Massachusetts. This endorsement is limited entry due to a moratorium on new fluke endorsements instated in 1999 to address a substantial increase in participation and landings. The fluke endorsement must be renewed annually.

MADMF policy has largely been against transfer of summer flounder endorsements, in order to maintain the moratorium's effectiveness in reducing the total number of endorsements. However, MADMF allows endorsement transfers between immediate family members (provided they meet the existing eligibility criteria) on a one-time basis, after which the endorsement becomes non-transferable. In addition, inshore trawl fishermen who sell their businesses (i.e., vessels, permits, etc.) may transfer a summer flounder endorsement if the other permits are active as inshore trawling could result in excessive summer flounder discards otherwise. For the offshore fishery, transfer of the summer flounder endorsement to the new permit holder is allowed when vessels and federal permits are sold.

Rhode Island

A Rhode Island (RI) commercial fishing license with a restricted finfish endorsement is required to take summer flounder for commercial purposes from Rhode Island waters. This endorsement is available only via an annual lottery or via renewal.

Rhode Island landing licenses are also required to transit through state waters for the purpose of landing at Rhode Island ports. For summer flounder, one must hold either a resident landing license or a non-resident restricted finfish landing license in order to transit state waters and land summer flounder at Rhode Island ports.

One additional requirement for commercial summer flounder in RI is, if in possession of more than 200 lbs of summer flounder, a state issued summer flounder exemption certificate is needed. There is a moratorium on issuance of new RI summer flounder exemption certificates, but they may be transferred under similar guidelines to federal summer flounder moratorium permits.

Connecticut

For the commercial possession or landing of summer flounder in Connecticut waters, Connecticut requires a Summer Flounder Quota-Managed Species Endorsement in conjunction with either of two limited access licenses or either of two open access licenses. Quota-Managed Species Endorsements were last issued in 2003 to those who qualified based on their commercial fishing history; new endorsements are not presently being issued. The endorsement must be renewed annually by March 31, or that privilege is permanently retired. Endorsements may only be transferred in conjunction with a limited-access license that qualifies for a transfer.

A Quota-Managed Species License Endorsement may be used in combination with either or both of the following limited-access commercial fishing licenses:

- Principal Commercial Fishing License (trawl gear, lobster pots.)
- General Commercial Fishing (Finfish) License (Commercial hook and line as well as other gears not typically relevant to the summer flounder fishery.)

These limited-access licenses are available only to those persons who held the license from June 1, 1995 to December 31, 2003, and who renewed the license by March 31 of the previous year. Holders of a limited access fishing license must also obtain/renew a Commercial Fishing Vessel Permit (see below) annually to maintain eligibility for the limited access license. Limited access licenses are transferable provided certain compliance and activity threshold requirements are met.

A Quota-Managed Species License Endorsement may also be used with either of the following open-access commercial fishing licenses:

- Commercial Landing Vessel Operator's License (authorizes licensee to operate a vessel used to land fish taken exclusively outside CT waters; fishing in CT waters is prohibited).
- Restricted Commercial Fishing License (commercial hook and line).

These open-access licenses are non-transferable and there is no annual renewal requirement.

Both of the limited-access licenses and the Commercial Landing Vessel Operator's License require that a Commercial Fishing Vessel Permit be issued for the fishing vessel being used by the licensee. The Commercial Fishing Vessel Permit is non-transferrable.

New York

In New York, a Food Fishing License allows the license holder to take and land food fish harvested from state waters and to land food fish taken from waters outside the state for commercial purposes.

To harvest summer flounder for commercial purposes in state waters, one must have a New York summer flounder commercial permit. To land summer flounder taken legally outside New York state waters for commercial purposes in New York, possession of a summer flounder landing permit is required. Licenses are non-transferrable and must be renewed annually. If the applicant is a corporation, the application must name a specific vessel and a separate permit must be obtained for each vessel fishing owned by the corporation. Such corporate permits must be carried on the specific vessel named in the permit when that vessel is being used to take summer flounder for commercial purposes.

Summer flounder Commercial Permits expire on the last day of December of each year. Applications for a summer flounder commercial permit will be accepted from November 15 until close of business April 15. Permittees must state their intent to be permitted to use only fixed gear (pound/trap net), only hook and line gear or for the use of all gear. The permit authorizes landings for that entire calendar year from that category of gear only. Permits are nontransferable except that the department may allow a one-time re-issuance of a summer flounder commercial harvesters permit to an immediate family member of a permit holder. Upon re-issuance, the former holder is no longer eligible for the permit, and all rights and responsibilities associated with the permit pass to the recipient.

New Jersey

A vessel must possess a valid New Jersey Summer Flounder Permit to participate in the directed fishery for summer flounder. Permits are issued in the name of the vessel and the owner and for the specific gear type(s) used to qualify for the permit.

Applications for hook and line permits were required to be submitted prior to May 31, 1994, and for any other gear type were required by January 1, 2000. Eligibility for a New Jersey Summer Flounder Permit was determined by the vessel's owner meeting the following criteria:

- The vessel landed and sold at least 1,000 pounds of summer flounder in each of two years during 1985-1992;
- The vessel possessed a valid New Jersey otter trawl, pound net, or gill net license or a valid Federal summer flounder permit during each of the two qualifying years described above. Vessels providing documentation regarding the amount of summer flounder landed for two years between January 1, 1985 to November 2, 1988 or vessels providing documentation of harvest by hook and line are exempt from this requirement.

The permit is valid from the date of issuance and for any subsequent years unless revoked as part of a penalty action. The vessel, when engaged in the directed summer flounder fishery, may only have on board the gear type(s) listed on that vessel's New Jersey Summer Flounder Permit.

The owner of a permitted vessel may transfer their Summer Flounder Permit, with approval by the NJ DEP, for vessel replacements and vessel sales. Transfer of a permit to a new vessel shall be limited to the same gear type(s) of the originally permitted vessel. Replacement vessels may not exceed 10 percent larger in vessel length, gross registered tonnage and net tonnage and 20 percent greater in horsepower than the originally permitted vessel. The vessel being replaced is no longer eligible for a New Jersey Summer Flounder Permit. For vessel sales, the owner selling the vessel shall no longer be eligible for a New Jersey Summer Flounder Permit based on the harvesting history of the vessel being sold.

Vessels operating under a New Jersey Summer Flounder Permit to commercially harvest summer flounder by hook and line are limited to a crew size of no more than five persons, including the captain. The vessel may not carry any passengers for hire while commercial fishing. When carrying passengers for hire the New Jersey Summer Flounder Permit is not valid and the recreational possession limits and seasonal restrictions apply.

Delaware

Delaware meets the Commission's requirements for *de minimis* status for the commercial summer flounder fishery (states having commercial landings less than 0.1% of the coastwide total). There is no permit specific to summer flounder. A person may possess commercial sizes and quantities of summer flounder provided they hold a valid Delaware commercial food fishing license and a food fishing equipment permit for gill nets.

Maryland

Maryland uses catch shares to equitably distribute their summer flounder commercial quota among harvesters in Atlantic coastal waters, coastal bays and tributaries, Chesapeake Bay (primarily bycatch) and the Potomac River. The catch share system assigns a specific individual fishing quota (IFQ) to each fisherman. Commercial fishermen without an IFQ are restricted to 100 lbs. per person per day in coastal waters and 50 lbs. per person per day in tidal waters (Chesapeake Bay).

An individual who possesses a Maryland summer flounder landing permit and lands more than the assigned permit allocation, including any quota transfers, shall have the overage deducted from the permit allocation for the following year. A permittee may annually transfer up to 100 percent of their individual quota to another permittee upon notification of and approval by the Department of Natural Resources (DNR). However, an individual may not hold more than 29 percent of the allocation for the total fishery.

Per Maryland regulations, no more than seven summer flounder landing permits may be issued by the DNR. The number of summer flounder landing permits is based on the reported catch and landing records of summer flounder in Maryland during 1998—2003. The name of the vessel on which the operator is working shall be declared on the Maryland summer flounder landing permit.

Individuals may apply for the permanent transfer of a Maryland Summer Flounder landing permit. Temporary transfers are not permitted. Regardless of the number of authorized individuals with permits on board any one federally permitted vessel, no more than two summer flounder quotas may be fished from one vessel per trip.

Virginia

A Commercial Fisherman Registration License is required to harvest and land summer flounder in Virginia waters. To land summer flounder harvest from outside of Virginia waters a Seafood Landing License, and a Summer Flounder Endorsement License (SFEL) are required. To qualify for a SFEL a vessel needed to have landed and sold at least 500 pounds of summer flounder in Virginia in at least one year during the period of 1993 through 1995. The SFEL was established in 1996. The licenses are transferable.

North Carolina

A license is required to land more than 100 pounds of summer flounder from the Atlantic Ocean in North Carolina. To be eligible for the license, the vessel must have been licensed by North Carolina, either through a resident or non-resident vessel license, or a land or sell license, during two of the three license years from July 1, 1992 to June 30, 1993, July 1, 1993 to June 30, 1994; or July 1, 1994 to June 30, 1995 and have landed 1,000 pounds or more of summer flounder each year for two of the three years.

14.0 APPENDIX B: ADDITIONAL SUPPORTING ANALYSIS FOR COMMERCIAL ALLOCATION ALTERNATIVES

This section contains additional supporting information for the alternatives described in section 5.2 (commercial allocation alternatives), including justification for the configurations of alternatives 2B and 2D.

14.1 NEFSC ANALYSIS FOR DEVELOPMENT OF ALTERNATIVE 2B

In October 2017, the NEFSC provided initial analysis supporting the development of alternative 2B, which considers regional shifts in relative exploitable biomass based on NEFSC trawl survey data. Based on the recommendations of the Demersal Committee in November 2017, Council staff requested updated analysis using additional survey strata in Georges Bank and the Gulf of Maine.⁴³ Staff also requested any explanation of the biological basis for the regional split at Hudson Canyon, as requested by the Committee. The response from NEFSC staff is provided below.

In summary, the revised analysis serves as the basis for alternative 2B (see section 5.2.2) and shows a shift of +13% (67% to 80%) in the Northern region relative exploitable biomass between 1980-1989 and 2007-2016. A description of the version 1 methodology and results can be found in the October 27, 2017 staff memo on commercial allocation provided to the Demersal Committee.⁴⁴

MAFMC Fluke Allocation Exercise, Version 2 - November 21, 2017

The strata set included in the previous version 1 of the exercise was expanded as per the MAFMC Demersal Committee request. Version 1 used the NEFSC strata sets included in the stock assessment. This version 2 strata set now includes all the Georges Bank, Gulf of Maine, Southern New England, and Mid-Atlantic Bight NEFSC offshore strata and adds the inshore strata for the fall.

In the spring when the fish are ‘offshore,’ the ‘North’ region set now includes offshore strata 1-40: south of Long Island NY and north through Georges Bank and the Gulf of Maine. The ‘South’ region still includes offshore strata 61-76: east of NJ and south to Cape Hatteras NC.

In the fall when more of the fish move ‘inshore,’ the ‘North’ region set now includes of offshore strata 1-40, inshore strata 1-14, and inshore strata 45-90: south of Long Island NY and north through Georges Bank and the Gulf of Maine, including all sampled inshore strata. The ‘South’ region now includes offshore strata 61-76 and inshore strata 15-44: east of NJ and south to Cape Hatteras NC, including all sampled inshore strata. See the strata maps below.

Version 1 of the exercise indicated that the ‘North’ region annual relative exploitable biomass was 62% of the Total during 1980-1989, increasing to 77% of the Total during 2007-2016. Therefore, the ‘South’ region was 38% of the Total during 1980-1989, decreasing to 23% of the Total during 2007-2016.

⁴³ November 2017 Demersal Committee meeting summary available at: <http://www.mafmc.org/s/SF-Amendment-Committee-recs-memo-November-17.pdf>

⁴⁴ Available at: <http://www.mafmc.org/s/Commercial-allocation-Committee-memo-Oct-30-2017.pdf>

Version 2 of the exercise indicated that the ‘North’ region annual relative exploitable biomass was 67% of the Total during 1980-1989, increasing to 80% of the Total during 2007-2016. Therefore, the ‘South’ region was 33% of the Total during 1980-1989, decreasing to 20% of the Total during 2007-2016.

There is no strong biological justification for the North/South break used in the exercise. The break divides the coast into regions coinciding with north/south of Hudson Canyon, or roughly north/south of the NY/NJ border at Raritan Bay. This is the same break used for the split in the BSB stock assessment and occurs at what is generally accepted as the most significant ‘biogeographic barrier’ between Cape Hatteras and Nantucket Shoals. However, historical tagging data (Kraus and Musick 2003), stock discrimination studies (Wilk et al. 1980), genetic studies (Jones and Quattro 1999), and consideration of summer flounder spatial distribution suggest this break may not be much of a barrier to summer flounder movement. The recent distribution appears to be continuous across the break during the NEFSC trawl survey seasons. See the distribution maps below for 2011-2015.

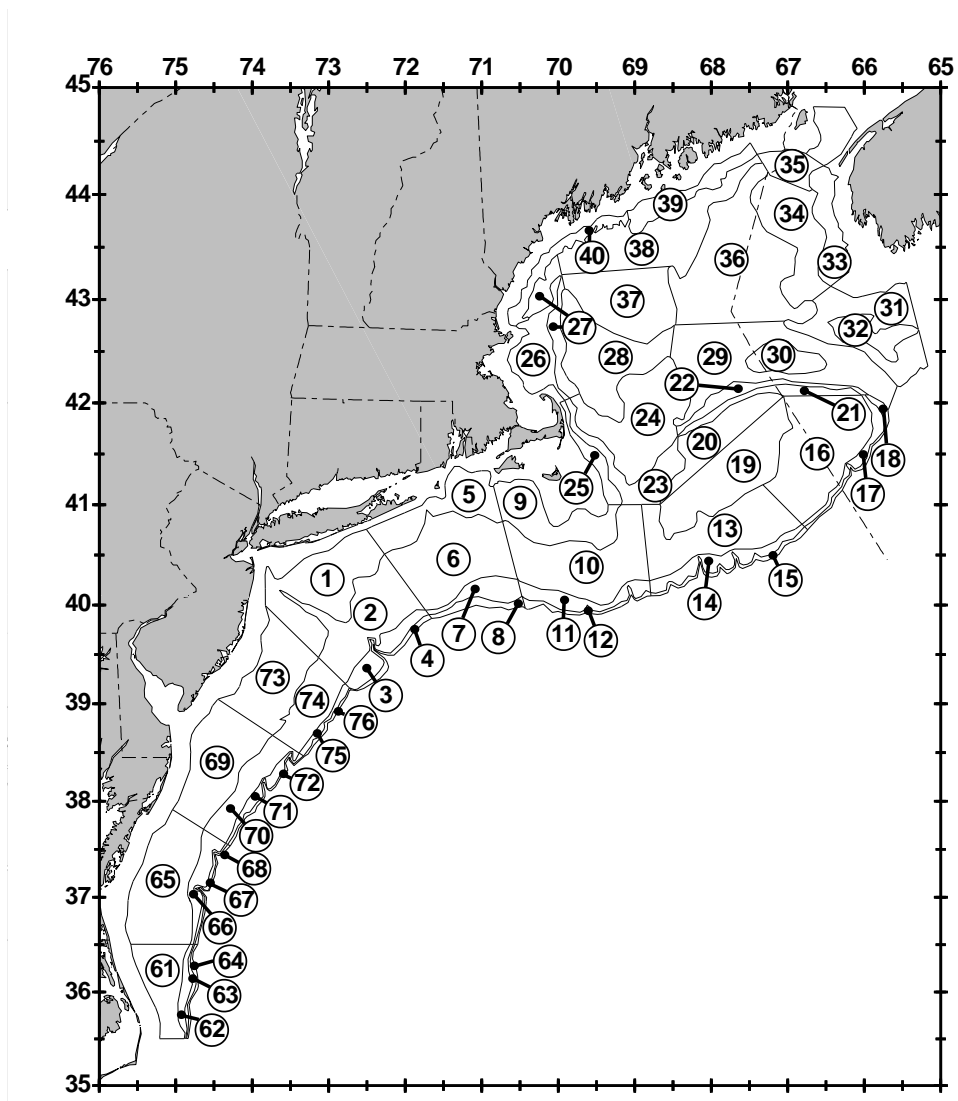


Figure 49: Strata sampled on NFESC offshore bottom trawl surveys. Depths range from 27 to >200 meters.

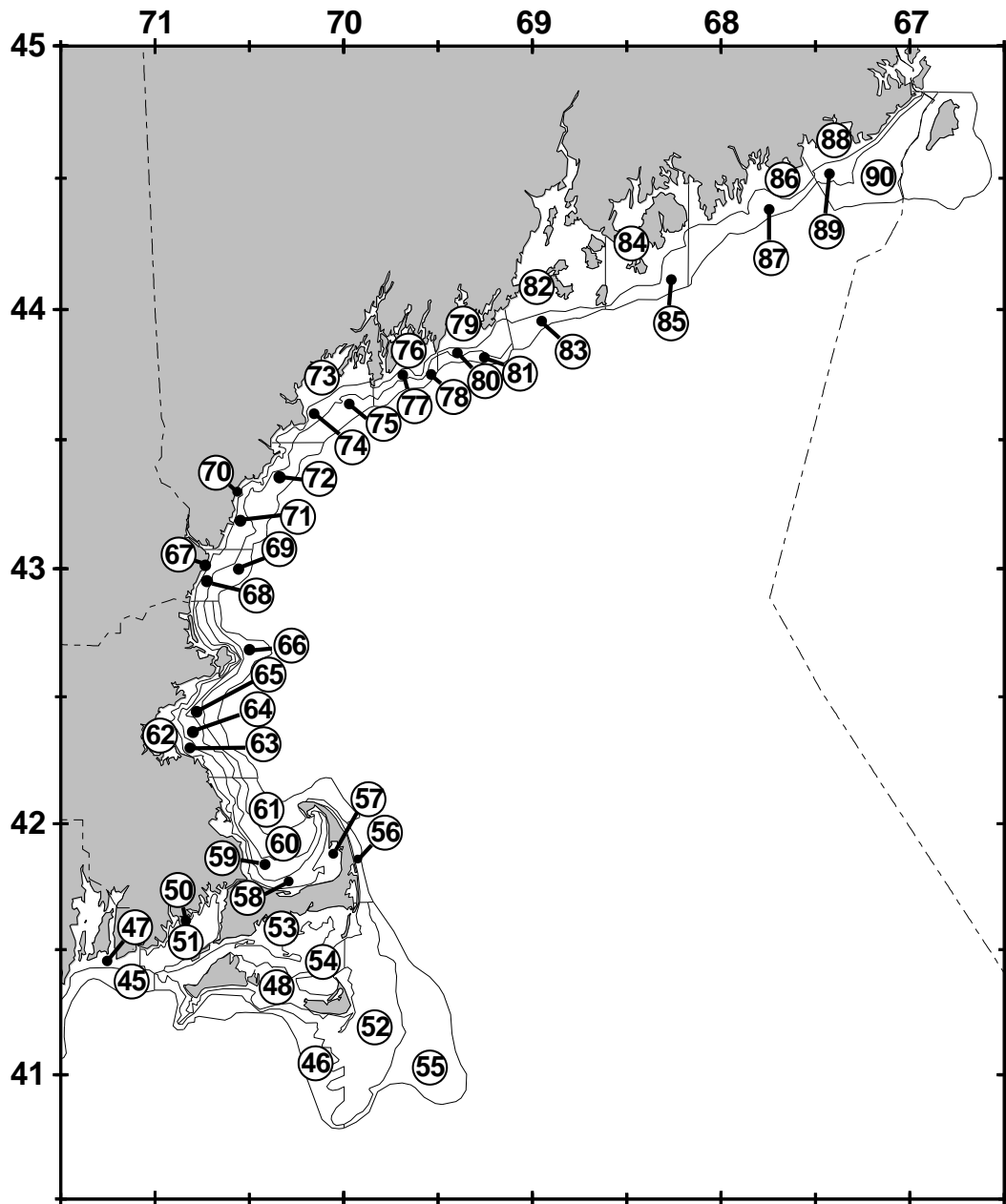


Figure 50: Strata sampled on NEFSC inshore bottom trawl surveys from Eastport, ME to Buzzards Bay, MA. Depths range from 0-54 meters.

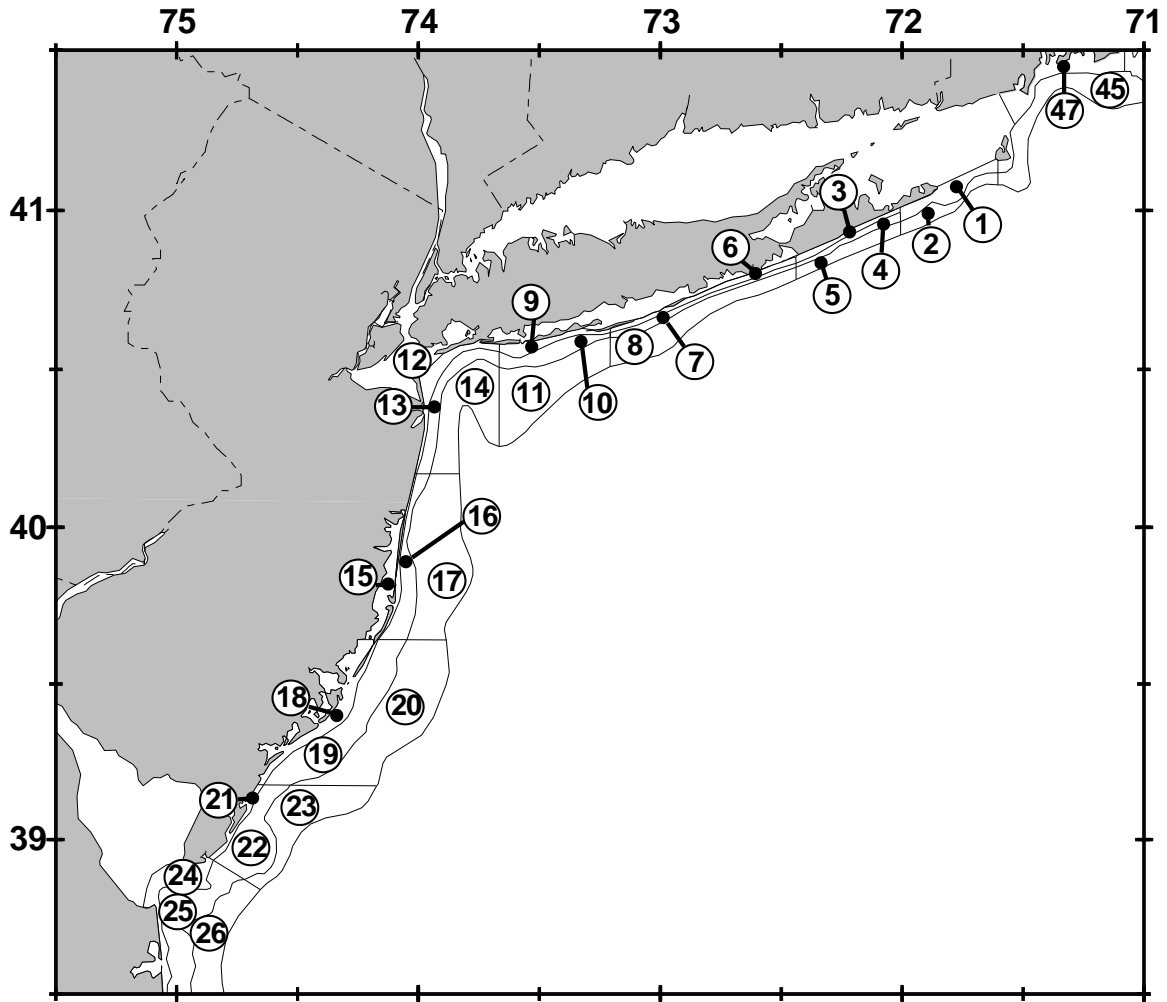


Figure 51: Strata sampled on NEFSC inshore bottom trawl surveys from Buzzards Bay, MA to Delaware Bay, DE. Depths range from 0-27 meters.

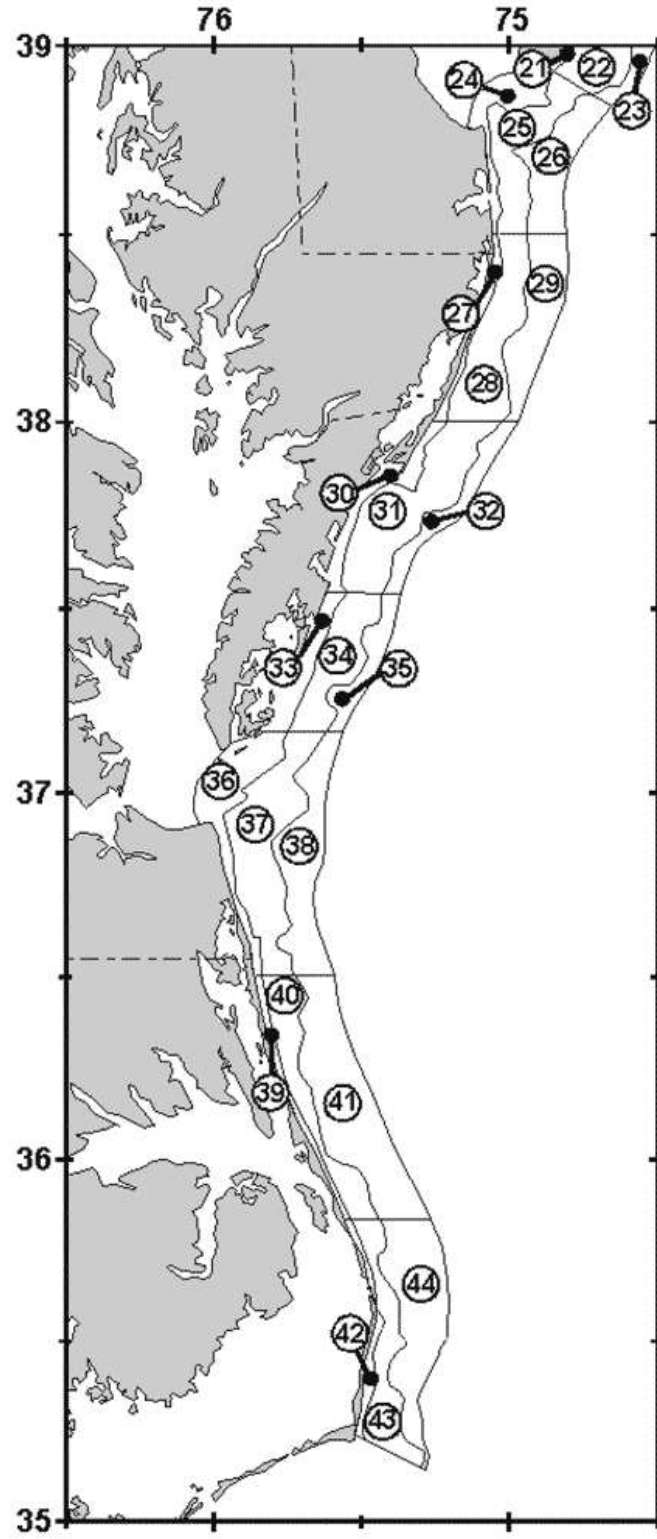


Figure 52: Strata sampled on NEFSC inshore bottom trawl surveys from Delaware Bay, DE to Cape Hatteras, NC. Depths range from 0-27 meters.

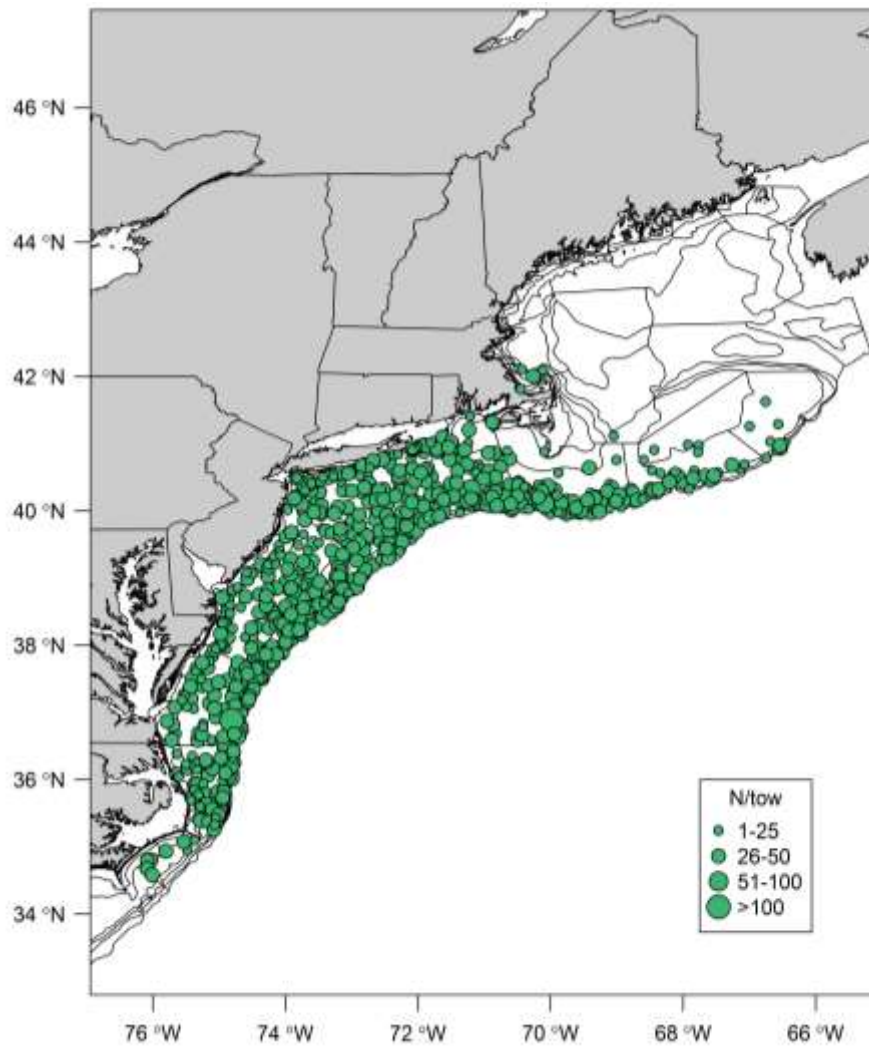


Figure 53: Summer flounder NEFSC spring survey, 2010-2015.

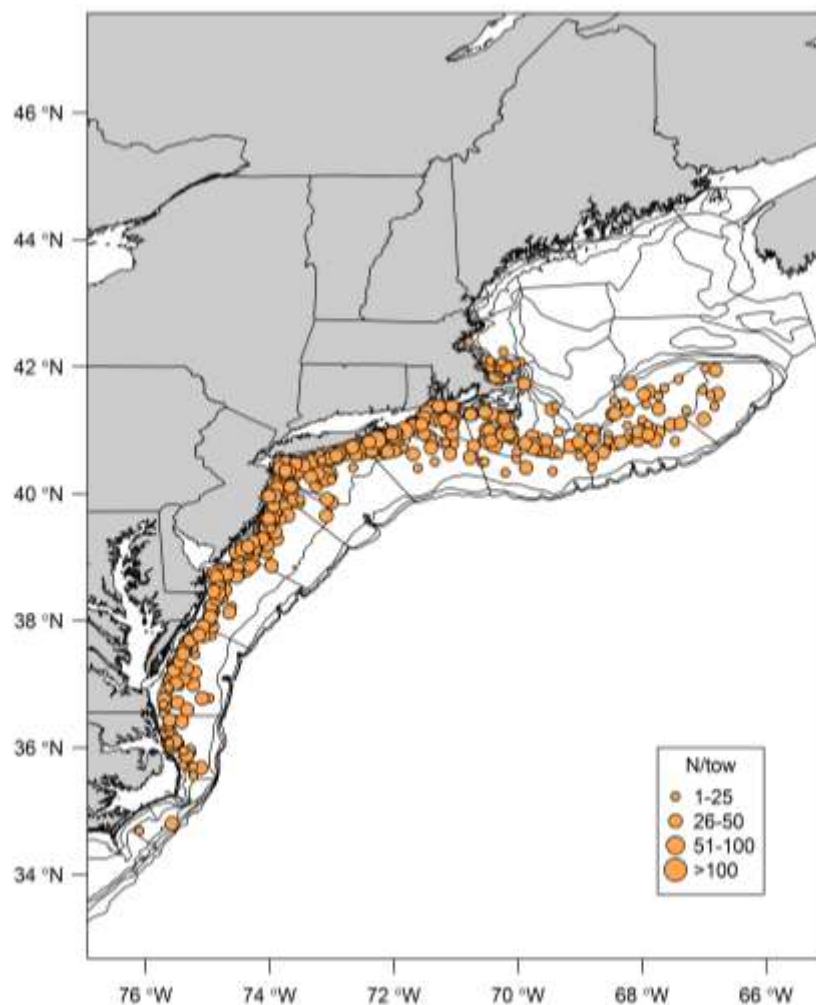


Figure 54: Summer flounder NEFSC fall survey, 2011-2015.

14.2 SUPPLEMENTAL DATA ON "SCUP MODEL" SEASONAL CONFIGURATION

As described in section 5.4, the recommended configuration for both alternatives 2D-1 and 2D-2 is as follows: Winter I period from January through April; Summer period from May through October; Winter II period from November through December. This configuration is consistent with the old configuration of scup quota, until it was revised based on a May 2017 decision by the Council and Board to move October into the Winter II quota period (83 FR 17314; April 19, 2018). The decision to configure alternative 2D such that October is in the Summer period for summer flounder, instead of making it consistent with the revised scup quota periods, was made based on a June 2017 Advisory Panel meeting discussion, as well as an initial evaluation of characteristics of the commercial fishery for summer flounder in October, as described below.

At the June 2017 meeting, one advisor involved with the commercial summer flounder fishery indicated that she supported the "scup model" in concept but recommended that October be included in the summer period instead of Winter II. This advisor indicated that the seasonal

characteristics of the summer flounder fishery are different enough from those of the scup fishery that consistency in seasonal quota period dates is not necessarily desirable. No other advisors presented commented on this issue.

Additional analysis of seasonality, vessel tonnage size, and area fished was examined following this meeting to compare the month of October to the surrounding months. Figure 55 and Table 63 describe the percentage of commercial summer flounder landings by gear tonnage class for September, October, and November, 2011-2015. Figure 56 describes the monthly percentage of summer flounder landings reported as caught in state waters vs. federal waters over 2012-2016. Table 64 describes the percentage of commercial summer flounder landings by month and gear type, 2012-2016.

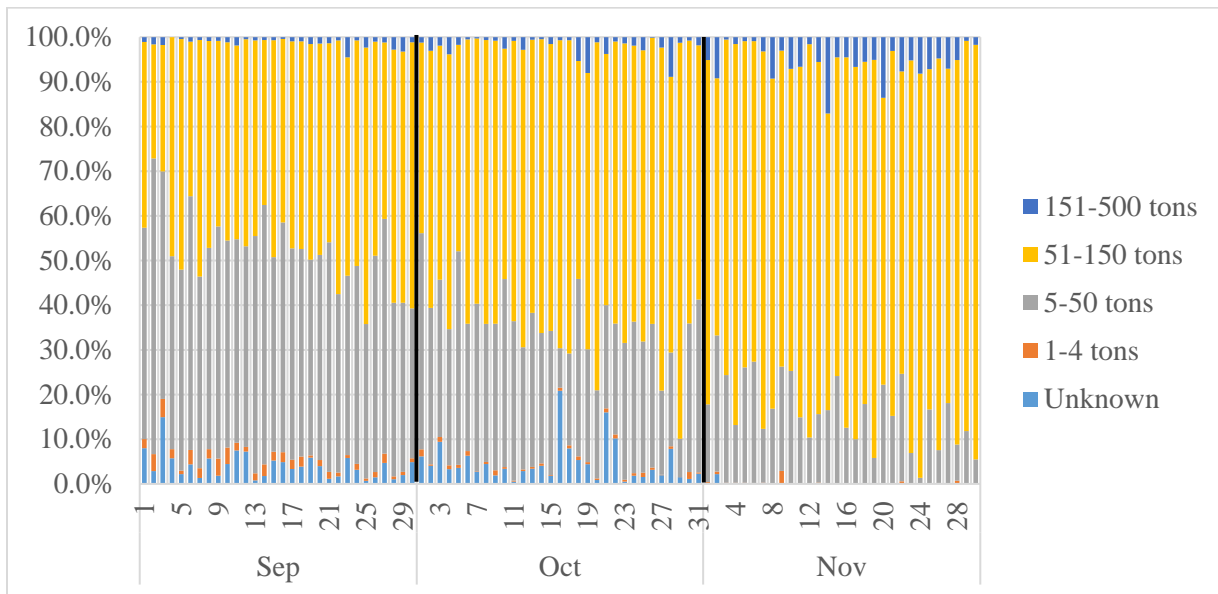


Figure 55: Percent of summer flounder landings by vessel tonnage class for September, October, and November, 2011-2015. Source: NMFS dealer data.

Table 63: Summer flounder commercial landings by vessel tonnage class for September, October, and November, from 2011-2015 dealer data.

		Sep	Oct	Nov
Vessel Tonnage	Unknown	4.00%	4.30%	0.10%
	1-4 tons	1.80%	0.60%	0.20%
	5-50 tons	46.30%	31.40%	15.10%
	51-150 tons	46.70%	61.80%	79.40%
	151-500 tons	1.20%	1.90%	5.20%

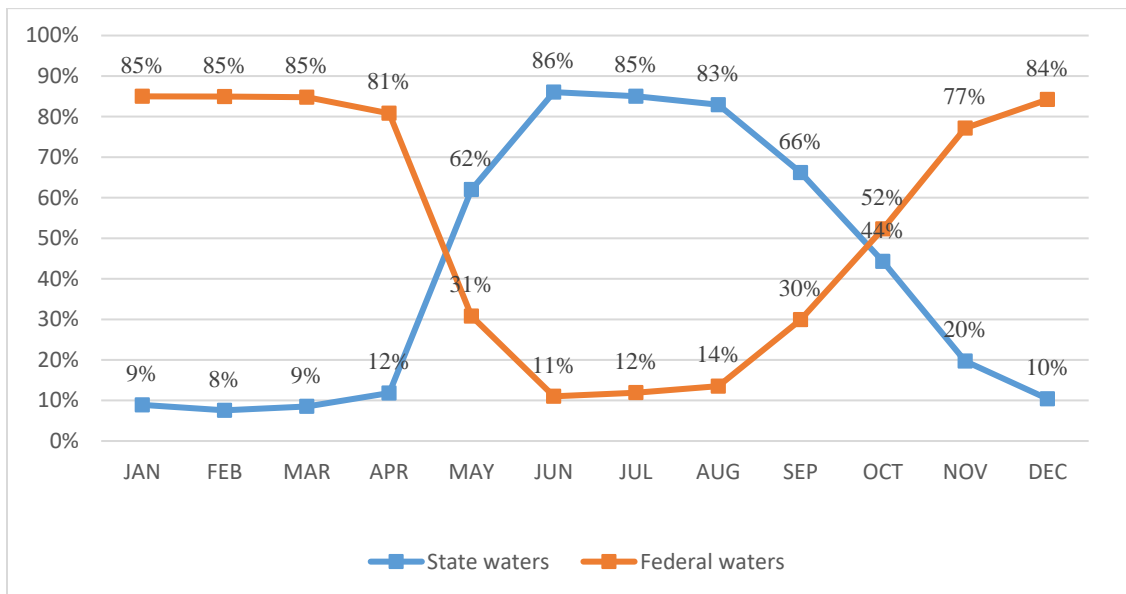


Figure 56: Summer flounder state vs. federal waters landings (coastwide) by month, as reported via 2013-2017 VTR data.

Table 64: Percentage of commercial summer flounder landings by gear category and month, 2012-2016 VTR data.

Gear Type	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
BOTTOM TRAWL	99.54%	99.74%	99.48%	98.56%	88.85%	88.80%	92.25%	93.67%	93.56%	92.58%	98.34%	99.09%	97.76%
GILLNET	0.15%	0.03%	0.03%	0.53%	5.94%	3.32%	1.36%	1.22%	2.59%	3.55%	0.62%	0.22%	0.74%
HANDLINE	0.01%	0.01%	0.00%	0.08%	3.02%	6.66%	5.42%	4.63%	1.22%	0.26%	0.03%	0.03%	0.72%
SCALLOP DREDGE	0.17%	0.12%	0.29%	0.53%	1.36%	0.40%	0.44%	0.03%	1.11%	2.52%	0.65%	0.21%	0.41%
BLANK/UNK.	0.14%	0.09%	0.19%	0.18%	0.34%	0.35%	0.29%	0.21%	1.22%	0.70%	0.33%	0.45%	0.27%
POT/TRAP	0.01%	0.01%	0.00%	0.06%	0.49%	0.44%	0.22%	0.21%	0.19%	0.21%	0.01%	0.00%	0.07%
OTHER	0.00%	0.01%	0.01%	0.05%	0.01%	0.04%	0.00%	0.02%	0.12%	0.18%	0.03%	0.00%	0.02%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

15.0 APPENDIX C: SUMMER FLOUNDER PORTS AND COMMUNITIES SUPPLEMENTAL INFORMATION

Section 6.5.2.2 of this DEIS describes the top commercial ports for summer flounder landings from 2007-2016, including all ports accounting for at least 1% of the total ex-vessel revenue for summer flounder reported by commercial dealers over this ten-year time period. These 17 ports together accounted for over 80% of the summer flounder ex-vessel value during this time period. The top five ports for summer flounder include Point Judith, RI, Hampton, VA, Newport News, VA, Pt. Pleasant, NJ, and Montauk, NY.

Community Profiles for the Northeast US Fisheries (Colburn et al. 2010) were developed by the NEFSC and describe in-depth information regarding the historic, demographic, cultural, and economic context for understanding a community's involvement in fishing. These profiles were developed in part for use in EIS documents. This appendix contains the community profiles for the top 17 commercial summer flounder ports (based on 2007-2016 data). More information on the development and use of community profiles can be found at: <https://www.nefsc.noaa.gov/read/socialsci/pdf/community-profiles/introduction.pdf>.

In addition to these profiles, the Northeast Fishing Community Snapshots provide more recent data for key indicators for Northeastern fishing communities related to dependence on fisheries and other economic and demographic characteristics. These snapshots are available at: <https://www.nefsc.noaa.gov/read/socialsci/communitySnapshots.php>.

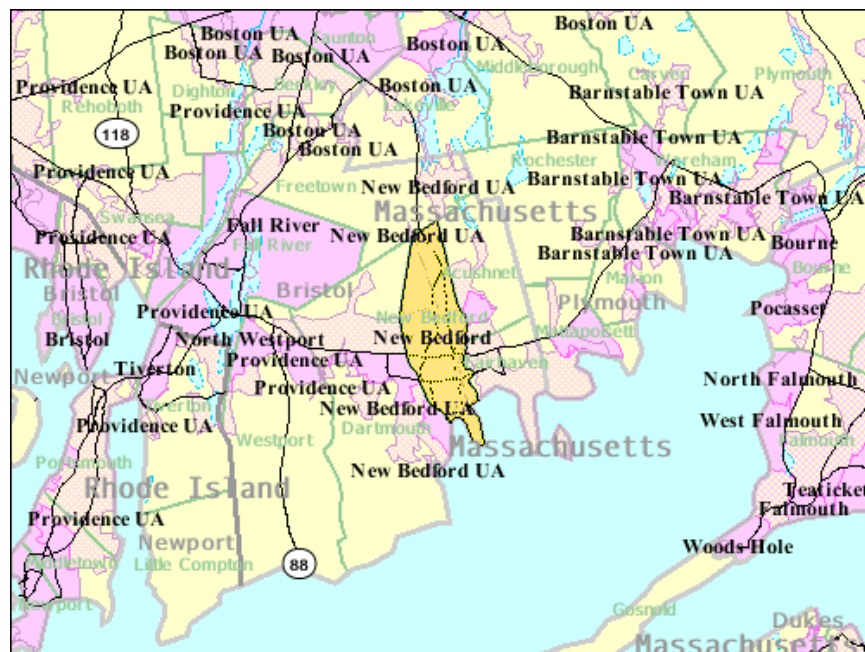
NEW BEDFORD, MA¹

Community Profile²

PEOPLE AND PLACES

Regional orientation

New Bedford is the fourth largest city in the commonwealth of Massachusetts. It is situated on Buzzards Bay, located in the southeastern section of the state in Bristol County. New Bedford is bordered by Dartmouth on the west, Freetown on the north, Fairhaven and Acushnet on the east, and Buzzards Bay on the south. The city is 54 miles south of Boston (State of Massachusetts 2006), and has a total area of 24 mi², of which about 4 mi² (16.2%) is water (USGS 2008).



Map 1. Location of New Bedford, MA (US Census Bureau 2000a)

Historical/Background

New Bedford, originally part of Dartmouth, was settled by Plymouth colonists in 1652. Fishermen established a community in 1760 and developed it into a small whaling port and shipbuilding center within five years. By the early 1800s, New Bedford had become one of the world's leading whaling ports. Over one half of the U.S. whaling fleet, which totaled more than 700 vessels, was registered in New Bedford by the mid 1800s. However, the discovery of petroleum greatly decreased the demand for sperm oil, bringing economic devastation to New

¹ These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

² For purposes of citation please use the following template: "Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov."

Bedford and all other whaling ports in New England. The last whale ship sailed out of New Bedford in 1925 (New Bedford Whaling Museum 2006). In attempts to diversify its economy, the town manufactured textiles until the southeast cotton boom in the 1920s. Since then, New Bedford has continued to diversify, but the city is still a major commercial fishing port (USGenNet 2006). It consistently ranks in the top two ports in the U.S. for landed value.

Demographics³

According to Census 2000 data (US Census Bureau 2000a), New Bedford had a total population of 93,768, down 6.2% from a reported population of 99,922 in 1990 (US Census Bureau 1990). Of this 2000 total, 47.1% were males and 52.9% were females. The median age was 35.9 years and 71.2 % of the population was 21 years or older while 18.9% was 62 or older.

New Bedford’s age structure (see Figure 1) by sex shows a higher number of females in each age group between 20 and over 80 years. There is no drop in the 20-29 age group (as occurs in many smaller fishing communities), which could be due to New Bedford’s proximity to Boston (several universities), the local sailing school, the Northeast Maritime Institute, or a large number of employment opportunities.

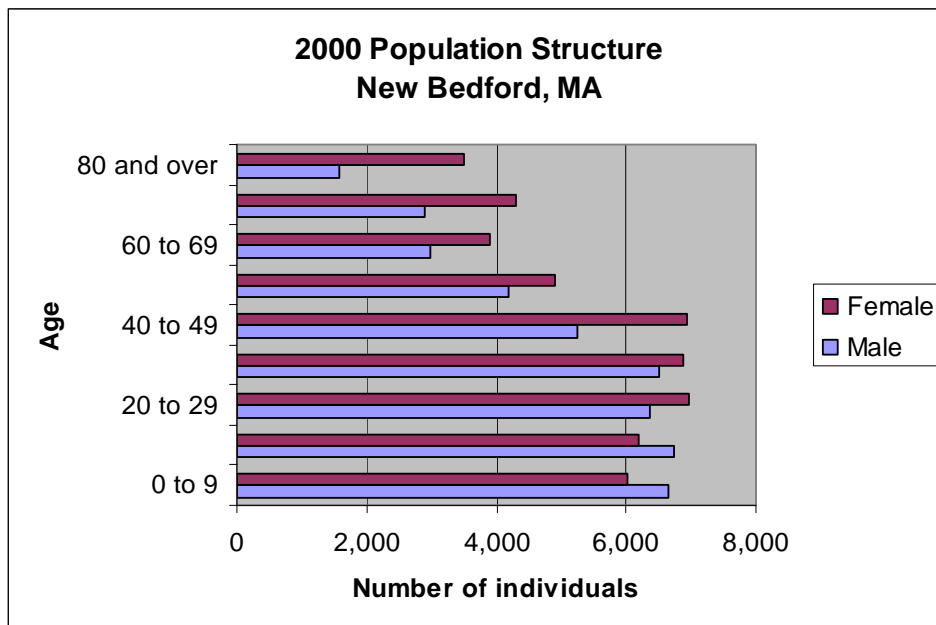


Figure 1. New Bedford’s population structure by sex in 2000 (US Census Bureau 2000a)

The majority of the population was white (83.8%), with 4.7% of residents black or African American, 0.7% Asian, 0.6% Native American, and 0.05% Pacific Islander or Hawaiian (see Figure 2). Only 10.2% of the population identified themselves as Hispanic/Latino (see Figure 3). (One community member noted that this number is probably much higher, but many undocumented immigrants do not respond to the Census. He noted that many Hispanics/Latinos

³ While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

work on fishing vessels and in processing plants.)⁴ Residents linked their backgrounds to a number of different ancestries including: Portuguese (38.6%), French (9.1%), and Sub-Saharan African (8.2%) (the vast majority of which are Cape Verdean) . With regard to region of birth, 67.8% were born in Massachusetts, 8.0% were born in a different state, and 19.6% were born outside of the U.S. (including 9.2% who were not United States citizens).

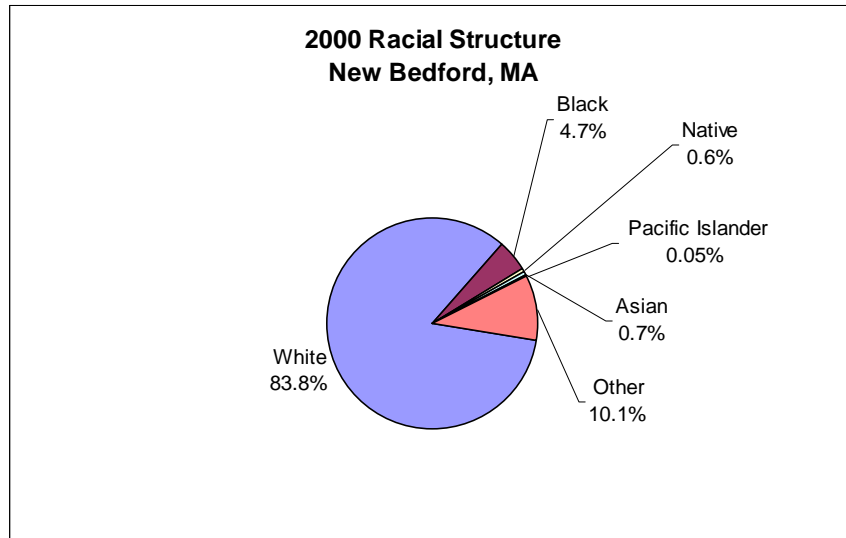


Figure 2. Racial Structure in 2000 (US Census Bureau 2000a)

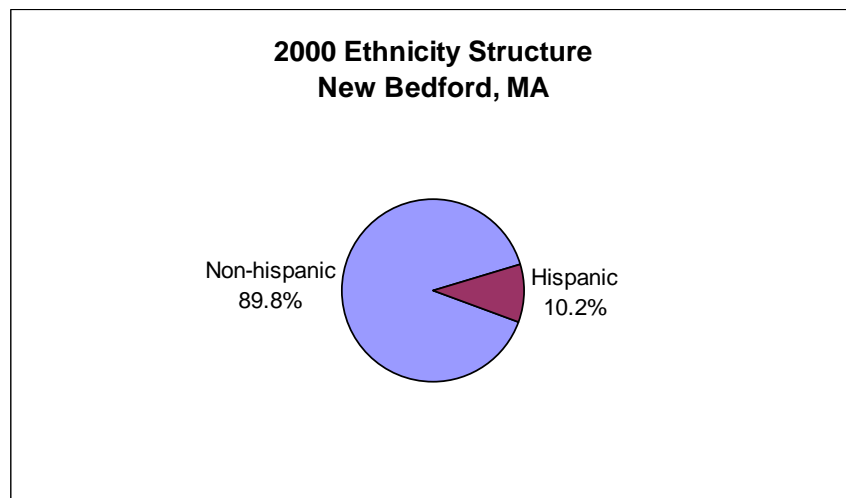


Figure 3. Ethnic structure in 2000 (US Census Bureau 2000a)

For 62.2% of the population, only English was spoken in the home, leaving 37.8% in homes where a language other than English was spoken, including 17.3% of the population who spoke English less than “very well” according to the 2000 Census.

Of the population 25 years and over, 57.6% were high school graduates or higher and 10.7% had a bachelor’s degree or higher. Again of the population 25 years and over, 24.3% did

⁴ Profile review comment, Rodney Avila, former commercial fisherman, 369 Belair St., New Bedford, MA 02745, August 14, 2007

not reach ninth grade, 18.1% attended some high school but did not graduate, 27.7% completed high school, 13.9% had some college with no degree, 5.3% received an associate's degree, 7.5% earned a bachelor's degree, and 3.2% received either a graduate or professional degree.

Although religion percentages are not available through U.S. Census data, according to the Association of Religion Data Archives (ARDA) in 2000, the religion with the highest number of congregations and adherents in the Bristol County was Catholic with 85 congregations and 268,434 adherents. Other prominent congregations in the county were United Methodist (17 with 3,583 adherents), United Church of Christ (19 with 5,728 adherents) and Episcopal (18 with 5,100 adherents). The total number of adherents to any religion was up 9.4% from 1990 (ARDA 2000).

Issues/Processes

New Bedford struggles with highly contaminated harbor water and harbor sediment. New Bedford Harbor is contaminated with metals and organic compounds, including polychlorinated biphenyls (PCBs) (US Department of Commerce 2002). Because of the high concentrations of PCBs in the sediment, New Bedford Harbor was listed by the U.S. EPA as a Superfund site in 1982 and cleanup is underway. Significant levels of these pollutants have accumulated in sediments, water, fish, lobsters, and shellfish in the Harbor and adjacent areas. New Bedford is also the only major municipality in the Buzzards Bay area to discharge significant amounts of untreated combined sewage, industrial waste, and storm water from combined sewer overflows (BBNEP 1991).

The pollution problem not only affects human health and the ecosystem, but has a large impact on New Bedford's economy. For example, closures of fishing areas in the harbor have caused economic losses in the millions for the quahog landings alone. Closure of the lobster fishery resulted in an estimated loss of \$250,000 per year and the finfish industry and recreational fishing have also been negatively affected (Comprehensive Conservation and Management Plan 1991). In addition to contaminated harbor sediments, numerous brownfield properties are located in proximity to the port, especially on the New Bedford side (US Department of Commerce 2002).

Another issue in New Bedford is in regards to fishing crew members. According to a 2002 newspaper article, fishing vessel owners complain of a shortage of crewmen. They attribute this scarcity to low unemployment rates that have kept laborers from the docks. Many choose to bypass work that government statistics place among the most dangerous jobs in the country. Many crewmembers are either inexperienced or come from foreign countries. Both present safety issues, according to one fisherman, because inexperienced crew get hurt more often and foreign crew have significant language barriers that impede communication. Additionally, the article noted, those willing to work sometimes struggle with alcohol and drug dependency. Ship captains have applicants roll up their shirt sleeves to check for traces of heroin use (Paul NC, Scriptor C 2002). However, a community member and former fisherman commented that this is not normal procedure; most of the drug problems in the city come from crew members on out-of-town boats. He also noted that with a decrease in days at sea vessels are allowed to fish, crew members have been more steady, most working on more than one vessel owned by a single owner.⁵

⁵ Profile review comment, Rodney Avila, former commercial fisherman, 369 Belair St., New Bedford, MA 02745, August 14, 2007

Cultural attributes

In September 2007, New Bedford hosted the fourth annual Working Waterfront Festival, dedicated to the commercial fishing industry in New Bedford. This festival is a chance for the commercial fishing industry to educate the public about its role in the community and in providing seafood to consumers, through boat tours, demonstrations, and contests. The annual Blessing of the Fleet is held as part of the Working Waterfront Festival <http://www.workingwaterfrontfestival.org/>.

The New Bedford community celebrates its maritime history with a culmination of activities in the New Bedford Summerfest. The Summerfest is held annually in July in conjunction with the New Bedford State Pier and the New Bedford National Whaling Historical Park. Summerfest also includes the Cape Verdean Recognition Day Parade and the Cape Verdean American Family Festival <http://www.newbedfordsummerfest.com/>.

The community has taken an active role in the remembrance of its maritime heritage. The Azorean Maritime Heritage Society, the New Bedford Whaling Museum and the New Bedford Whaling National Historical Park have cooperated to raise awareness of the maritime history of the Azorean community on both sides of the Atlantic.

The [New Bedford Whaling Museum](#) was established by the Old Dartmouth Historical Society in 1907 to tell the story of American whaling and to describe the role that New Bedford played as the whaling capital of the world in the nineteenth century. Today the whaling Museum is the largest museum in America devoted to the history of the American whaling industry and its greatest port.

The New Bedford Whaling National Historical Park was created in 1996 and focuses in the city's whaling history. The park covers 13 city blocks and includes a visitor center, the New Bedford Whaling Museum, and the Rotch-Jones-Duff House and Garden Museum (US Department of the Interior 2006).

Every summer, the City of New Bedford offers a free monthly cultural night in downtown called "[Aha!](#)" (Art, History & Architecture). Started in 1999, the series includes music, open galleries, vendors, and music on the second Thursday of each month.

INFRASTRUCTURE

Current Economy

The New Bedford Economic Development Council (NBEDC), Inc. was established in 1998 to improve the city's economic development by helping to attract business and job opportunities to the city. The NBEDC also provides small business funds and offers financial support (in loans) for new businesses or those who want to expand. One of their loan funds is specifically targeted at fishermen (NBEDC 2006).

With a federal grant and local funds, the city and the Harbor Development Council (HDC) in 2005 began construction on a \$1 million, 8,500-square foot passenger terminal at State Pier to support passenger ferry service. The HDC received a federal grant for more than \$700,000 to construct the passenger terminal and to improve berthing at the New Bedford Ferry Terminal (NBEDC 2006). The city has also redeveloped Standard Times Field, a brownfield site, into an industrial park targeted towards the seafood industry; a number of seafood processors have relocated to this site.⁶

⁶ Profile review comment, Dave Janik, Massachusetts Department of Coastal Zone Management, South Coast CZM Regional Coordinator, 2870 Cranberry Highway, Wareham, MA 02538, October 5, 2007

According to a 1993 survey, major employers that provided over 100 jobs in New Bedford included the following businesses with the number of employees in parentheses: Acushnet Company (1,600), Cliftex (1,400 – now out of business⁷), Aerovox (800), Calish Clothing (750), and Polaroid (465) (City of New Bedford 2006). “According to a study conducted in July 1998, harbor-related businesses account for an estimated \$671 million in sales and 3,700 jobs within the local area. The core seafood industry, comprising harvesting vessels and dealers/processors, contributes nearly \$609 million in sales and 2,600 local jobs (State of Massachusetts 2002).” New Bedford accounts for 45% of employment in the seafood harvesting sector in the state of Massachusetts (State of Massachusetts 2002).

According to the U.S. Census 2000⁸, 57.7% (42,308 individuals) of the total population 16 years of age and over were in the labor force (see Figure 4), of which 5.0% were unemployed, 0.2% were in the Armed Forces, and 52.5% were employed.

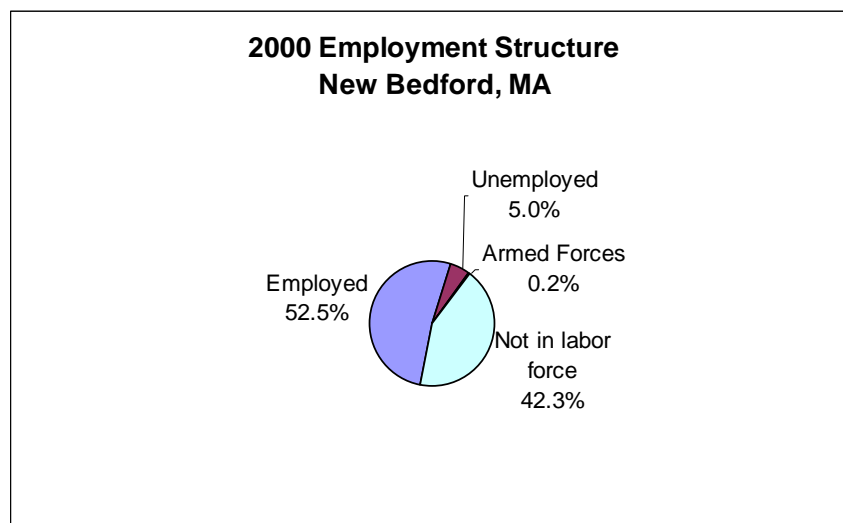


Figure 4. Employment structure in 2000 (US Census Bureau 2000a)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 407 or 1.1% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 1,485 or 3.9% of the labor force. Educational, health and social services (20.9%), manufacturing (20.7%), retail trade (12.1%), entertainment, recreation, accommodation and food services (7.4%), and construction (7.1%) were the primary industries.

Median household income in New Bedford was \$27,569 (up 21.7% from \$22,647 in 1990 (US Census Bureau 1990a)) and median per capita income was \$15,602. For full-time year round workers, males made approximately 29.0% more per year than females.

The average family in New Bedford consisted of 3.01 persons. With respect to poverty, 17.3% of families (up from 16.8% in 1990 (US Census Bureau 1990a)) and 20.2% of individuals earned below the official U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9)

⁷ Profile review comment, Rodney Avila, former commercial fisherman, 369 Belair St., New Bedford, MA 02745, August 14, 2007

⁸ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

(US Census Bureau 2000b). In 2000, 48.8% of all families (of any size) earned less than \$35,000 per year.

In 2000, New Bedford had a total of 41,511 housing units of which 92.0% were occupied and 30.2% were detached one unit homes. Approximately half (49.9%) of these homes were built before 1940. Mobile homes in this area accounted for 0.3% of the total housing units; 95.0% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$113,500. Of vacant housing units, 0.3% were used for seasonal, recreational, or occasional use. Of occupied units 56.2% were renter occupied.

Government

New Bedford was incorporated as a town in 1787 and as a city in 1847. The city of New Bedford has a Mayor and a City Council (City of New Bedford 2006).

Fishery involvement in government

The Harbor Development Commission includes representatives from the fish-processing and harvest sectors of the industry. NOAA Fisheries, [Fisheries Statistics Office](#), has two port agents based in New Bedford. Port agents sample fish landings and provide a ‘finger-on-the-pulse’ of their respective fishing communities. “The HDC has jurisdiction over all the waters in New Bedford, including the entire coastline of the peninsula, the harbor, and north along the Acushnet River to the city’s boundaries. The HDC manages city property on the waterfront, including Homer’s, Leonard’s, Steamship, Coal Pocket and Fisherman’s Wharves and a 198-slip recreational marina at Pope’s Island. The HDC also assigns moorings and enforces rules regarding use of piers, wharves, and adjacent parking areas under its jurisdiction. The Harbormaster acts as an agent of the HDC (City of New Bedford 2006).” New Bedford also has a Shellfish Warden.

Institutional

Fishing associations

There are a variety of fishing associations which aid the fishing industry in New Bedford, including the American Dogfish Association, the American Scallop Association, and the Commercial Anglers Association. New Bedford also is home to a Fishermen’s Wives Association which began in the early 1960s. Additionally, New Bedford has the Offshore Mariner’s Wives Association which includes a handful of participants that organize the “Blessing of the Fleet” (Hall-Arber et al. 2001).

The Massachusetts Fisherman’s Partnership focuses on issues for fishermen in different ports in Massachusetts. The Partnership responded to the need of health care for fishermen and their families by developing the Fishing Partnership Health Insurance Plan with federal and state aid. This plan has been in place since 1997 and reduces the amount of money that fishermen’s families have to pay to be covered by health insurance (Hall-Arber et al. 2001).

Fishing assistance centers

[Shore Support](#) has been the primary fishing assistance center in New Bedford since 2000 (Hall-Arber et al. 2001). Their mission is “to identify and organize the rank and file fishermen in the port of New Bedford, to keep fishing families aware of retraining opportunities and human services when necessary, and to create a liaison between the rank and file fishermen and the regulatory system.” The New Bedford Fishermen and Families Assistance Center, formerly

active here, has closed its doors, and the Trawlers Survival Fund is no longer active. The Industry Survival Fund, which deals with the scallop industry, is active in New Bedford at present.⁹

Other fishing related organizations

There are several other fishing related organizations and associations that are vital to the fishing industry such as the Fisheries' Survival Fund (Fairhaven), the New Bedford Fishermen's Union, the New Bedford Seafood Coalition, and the New Bedford Seafood Council (Hall-Arber 2001).

The Community Economic Development Center is a non-profit organization vested in the economic development of the local community. The organization is unique in that it is involved with fisheries management. The center is currently engaged in a research project to better understand the employment status in the fishing industry. The center is a liaison for migrant workers and other newcomers to the community to have access to the benefits provided by the city. In the past the center at one time had a re-training program for displaced fishermen to move into aquaculture.

The [School for Marine Science and Technology](#) (SMAST), part of the University of Massachusetts at Dartmouth, is based in New Bedford. SMAST is a graduate school offering interdisciplinary degrees in ocean and marine science, including fisheries science and management.

Physical

Interstate 195 and State routes 24 and 140 provide access to the airports, ports, and facilities of Providence and Boston. In addition to being only about 50 miles from Boston, New Bedford is located 33 miles southeast of Providence, RI and approximately 208 miles from New York City. "New Bedford Harbor is at the mouth of the Acushnet River, which flows south into Buzzards Bay and the Atlantic Ocean. The entrance to the harbor is nine nautical miles from the beginning of the Cape Cod Canal shipping channel. The Port of New Bedford is a deep-water port with depths of 30 feet. The harbor features a hurricane barrier that stretches across the water from the south end of New Bedford to the Town of Fairhaven. The barrier's 150-foot opening is closed during hurricane conditions and coastal storms. As a result, the harbor is one of the safest havens on the eastern seaboard (City of New Bedford 2006)."

The Consolidated Rail Corporation (Conrail) provides services into New Bedford. The New Bedford Municipal Airport is located 2 miles NW of the city. Cape Air, located in Hyannis on Cape Cod, offers flights to and from New Bedford, as does Bayside Air Charter (located at the New Bedford Regional Airport). Ferry service to the island of Martha's Vineyard is available daily (year-round) from the State Pier in the city. Whaling City Harbor Tours & Water Taxi Service offers mooring-to-dock services in the summer months to recreational boaters. They also offer tours of the commercial fishing fleet and the lighthouse, also in the summer season. Intercity bus service is offered by American Eagle Motor Coach, Inc. and Bonanza Bus Lines to Cape Cod, Providence, Newport, and Boston. [Southeastern Regional Transit Authority](#) offers local bus service throughout the New Bedford area. The Massachusetts Bay Transportation Authority has been considering extending the commuter rail service to New Bedford from Boston. In the summer of 2007, a pilot fast ferry service started between New

⁹ Profile review comment, Rodney Avila, former commercial fisherman, 369 Belair St., New Bedford, MA 02745, August 14, 2007

Bedford and Woods Hole; the service ran for four months, and will be evaluated by city officials to determine whether it will continue (Urbon 2007).

There are several marinas in New Bedford and nearby Fairhaven, in addition to the major commercial docks. The HDC operates the 198-slip public marina at Pope's Island, which is located within the Hurricane Barrier in the upper harbor east of the New Bedford/Fairhaven Bridge. Pope's Island Marina is situated along the south side of the island and receives financial assistance from the Massachusetts Department of Conservation and Recreation. Services include on-site laundry facilities, pump out facilities, shower rooms, and conference room, with dockside water and electricity available <http://www.ci.newbedford.ma.us/PortofNewBedford/GettingAround/PopesIsland.html>. There are more than 950 recreational boat slips in New Bedford/Fairhaven Harbor (City of New Bedford 2006).

INVOLVEMENT IN NORTHEAST FISHERIES¹⁰

Commercial

In the 1980s, fishermen experienced high landings and bought new boats due to a booming fishing industry. In the 1990s, however, due to exhausted fish stocks, the fishing industry experienced a dramatic decrease in groundfish catches and a subsequent vessel buyback program, and strict federal regulations in attempts to rebuild the depleted fish stocks. A new decade brought more changes for the fishing industry (Kennedy 2001). By 2000 and 2001 New Bedford was the highest value port in the U.S. (generating \$150.5 million in dockside revenue) (Plante 2002).

The range of species landed in New Bedford is quite diverse and can be separated by State and Federal (see Table 1) permits, however this profile displays only Federal landings data. It is important to note that according to State permits, the largest landings were of cod, haddock, and lobster, and with impressive representation by a number of different species. According to the federal commercial landings data, New Bedford's most successful fishery in the past ten years has been scallops, followed by groundfish. Scallops were worth significantly more in 2006 than the 1997-2006 average values, and the total value of landings for New Bedford generally increased over the same time period. The value of groundfish in 2006, however, was considerably less than the ten-year average value. The number of vessels whose home port was New Bedford increased somewhat between 1997 and 2006, while the value of fishing for home port vessels more than doubled from \$80 million to \$184 million over the same time period. The number of vessels whose owner's city was New Bedford fluctuated between 137 and 199 vessels, while the value of landings in New Bedford tripled from \$94 million in 1998 to and \$281 million in 2006 (see Table 2). One community member notes that the number of vessels in

¹⁰ In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

the harbor as of 2007 is up to 232. The number of fishing vessels based out of New Bedford has increased in the last few years due a loss of infrastructure in other ports; New Bedford has seen vessels relocate here from Gloucester, Portland, Plymouth, Newport, and even as far away as Virginia.¹¹

New Bedford has approximately 44 fish wholesale companies, 75 seafood processors, and some 200 shore side industries (Hall-Arber 2001). [Maritime International](#) has one of the largest U.S. Department of Agriculture-approved cold treatment centers on the East Coast. Its terminal receives approximately 25 vessels a year, most carrying about 1,000 tons of fish each. [American Seafoods](#), one of the largest seafood companies in the United States, has a large processing facility in New Bedford where they process primarily scallops. [Norpel](#) (Northern Pelagic Group, LLC), also in New Bedford, is one of the largest pelagic processing companies in the United States, catching and processing both mackerel and herring with a dedicated fleet of mid-water trawlers. New Bedford’s auction house, [Whaling City Seafood Display Auction](#), opened in 1994, allowing fishermen to get fair prices for their catch and providing buyers with a more predictable supply of seafood. One of the recommendations of the New Bedford/Fairhaven Harbor Plan was to establish effective public oversight of the auction process (State of Massachusetts 2002).

Landings by Species

Table 1. Dollar value of Federally Managed Groups of landings in New Bedford

	Average from 1997-2006	2006 only
Scallop	108,387,505	216,937,686
Largemesh Groundfish ¹²	30,921,996	23,978,055
Monkfish	10,202,039	8,180,015
Surf Clams, Ocean Quahog	7,990,366	9,855,093
Lobster	4,682,873	5,872,100
Other ¹³	4,200,323	2,270,579
Skate	2,054,062	3,554,808
Squid, Mackerel, Butterfish	1,916,647	5,084,463
Summer Flounder, Scup, Black Sea Bass	1,481,161	2,227,973
Smallmesh Groundfish ¹⁴	897,392	1,302,488
Herring	767,283	2,037,784
Dogfish	89,071	13,607
Bluefish	25,828	10,751
Tilefish	2,675	1,084

Note: Red crab are also landed, but data cannot be reported due to confidentiality.

¹¹ Profile review comment, Rodney Avila, former commercial fisherman, 369 Belair St., New Bedford, MA 02745, August 14, 2007

¹² Largemesh groundfish: cod, winter flounder, witch flounder, yellowtail flounder, am. plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

¹³ “Other” species includes any species not accounted for in a federally managed group

¹⁴ Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

Vessels by Year¹⁵

Table 2: All columns represent vessel permits or landings value combined between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port (\$)	Level of fishing landed port (\$)
1997	244	162	80,472,279	103,723,261
1998	213	137	74,686,581	94,880,103
1999	204	140	89,092,544	129,880,525
2000	211	148	101,633,975	148,806,074
2001	226	153	111,508,249	151,382,187
2002	237	164	120,426,514	168,612,006
2003	245	181	129,670,762	176,200,566
2004	257	185	159,815,443	206,273,974
2005	271	195	200,399,633	282,510,202
2006	273	199	184,415,796	281,326,486

(Note: # Vessels home ported = No. of permitted vessels with location as homeport

Vessels (owner's city) = No. of permitted vessels with location as owner residence¹⁶

Level of fishing home port (\$) = Landed value of fisheries associated with home ported vessels

Level of fishing landed port (\$) = Landed value of fisheries landed in location)

Recreational

While recreational fishing in New Bedford Harbor is discouraged due to heavy metal contamination (Department of Health and Human Services), a number of companies in New Bedford offer the public [recreational fishing excursions including boat charters](#). There are also several bait and tackle stores, many of which serve as [official state fishing derby weigh-in stations](#). “In 1999 there were approximately 950 slips in New Bedford Harbor and 85% were visitor based. According to FXM Associates, marina operators agreed that an additional 200 slips could be filled. A few owners of fishing boats in the 45 to 50 foot range have obtained licenses for summer party boat fishing. Tuna is a popular object for recreational fishing as are stripped bass” (Hall-Arber et al. 2001).

Subsistence

While no information on subsistence fishing in New Bedford was obtained through secondary data collection, the large number of ethnic groups in New Bedford may indicate subsistence fishing does occur.

FUTURE

For several years, work was underway to construct the New Bedford Oceanarium that would include exhibits on New Bedford’s history as a whaling and fishing port, and was expected to revitalize the city’s tourist industry and create jobs for the area. The Oceanarium

¹⁵ Numbers of vessels by owner’s city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

¹⁶ The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

project failed to receive its necessary funding in 2003 and 2004, and while the project has not been abandoned, it seems unlikely the Oceanarium will be built anytime in the near future.

According to a 2002 newspaper article, many fishermen believe that based on the quantity and ages of the species they catch, the fish are coming back faster than studies indicate. While most admit that regulations have worked, they believe further restrictions are unnecessary and could effectively wipe out the industry. "If they push these [regulations] too hard, the whole infrastructure of fishing here could collapse," according to a New Bedford fishermen (Paul, Scriptor 2002).

New Bedford has a Harbor Plan for New Bedford/Fairhaven harbor, which is focused on developing traditional harbor industries, capturing new opportunities for tourism and recreational use, rebuilding harbor infrastructure, and enhancing the harbor environment. Projects completed or underway as part of the Harbor Plan include a revitalization of the State Pier and redevelopment of the Standard Times Field as an industrial park to house fishing-related businesses (State of Massachusetts 2002). The plan received state approval in 2002, and was recognized as one of the most progressive harbor plans produced in the state.¹⁷

The [Massachusetts Fisheries Institute](#) is planned for New Bedford; the institute is collaboration between the University of Massachusetts, the Massachusetts Intercampus Graduate School of Marine Sciences and Technology, the Department of Marine Fisheries, and the Executive Office of Environmental Affairs. The project intends to team up scientists, fishermen, and graduate and undergraduate students to develop practical and innovative fisheries management applications.

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¹⁷ Profile review comment, Dave Janik, Massachusetts Department of Coastal Zone Management, South Coast CZM Regional Coordinator, 2870 Cranberry Highway, Wareham, MA 02538, October 5, 2007

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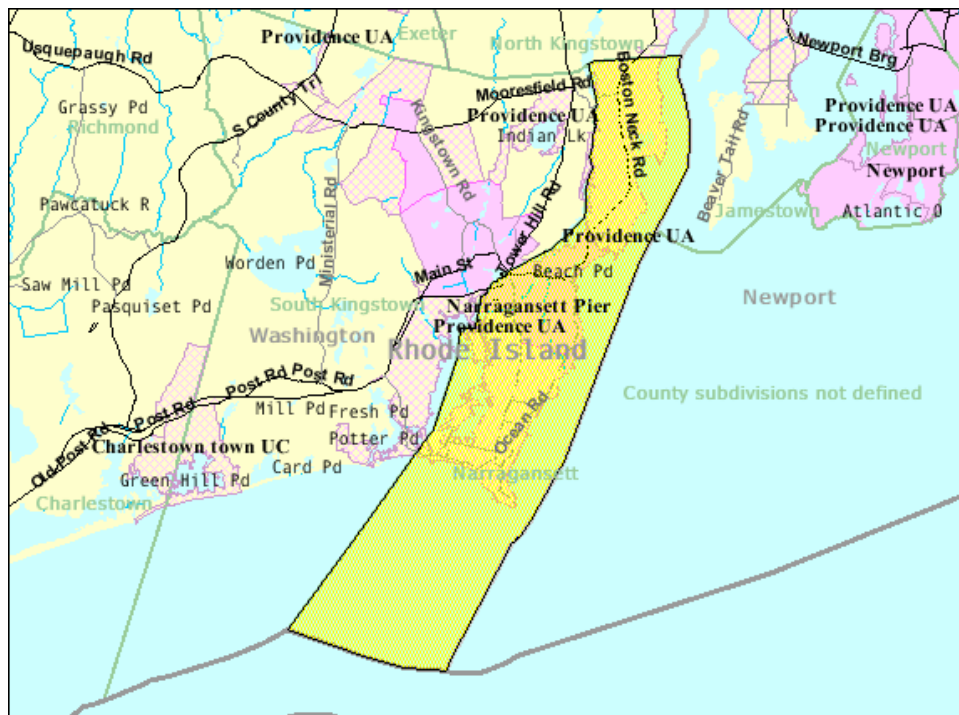
POINT JUDITH/NARRAGANSETT, RI¹

Community Profile²

PEOPLE AND PLACES

Regional orientation

Narragansett (41.45°N, 71.45°W) (USGS 2008) is located in Washington County, 30 miles south of Providence. Point Judith is located in the southern end of Narragansett along Highway 108 near Galilee State Beach, at the western side of the mouth of Rhode Island Sound. Point Judith itself is not a CDP or incorporated town, and as such has no census data associated with it. Thus, this profile provides census data from Narragansett Town (town-wide) and other data from both Point Judith itself and Narragansett. According to the state of Rhode Island both Point Judith and Galilee are considered villages within the town of Narragansett (State of Rhode Island 2008).



Map 1. Location of Narragansett, RI (US Census Bureau 200a)

Historical/Background

The land now called Narragansett was originally inhabited by the Narragansett Indians until Roland Robinson purchased it in 1675 (Town of Narragansett nd). Over the next half-

¹ These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

² For purposes of citation please use the following template: “Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov.”

century, the Rhode Island, Connecticut and Massachusetts colonies all vied for control of Narragansett until the British crown placed the area under the control of Rhode Island (State of Rhode Island 2008). By the 1660s, settlers put the fertile soil to use by developing agriculture in the area. Soon the area's economy depended on the export of agricultural products to markets such as Boston, Providence, and Newport. At this time, Point Judith was connected to the sea by a deep, wide breachway, which was used to ship the agricultural goods to market. By the 1700s there was a thriving ship building industry and a busy port. In the early 1800's Narragansett, like the rest of the country experienced rapid industrial growth, particularly in the textile industry. By the mid 1800's the resort tourism industry developed in Narragansett including the once popular Narragansett Casino. The Narragansett Casino was destroyed by fire on September 12, 1900; most of the remaining tourism resorts were destroyed by fire in the early 1900s (Narragansett nd; Encyclopaedia Britannica 2008). Fishing did not come into prominence again until the 1930s (Griffith and Dyer 1996)

By the 1800s many farmers began to supplement their income by fishing for bass and alewife, or harvesting oysters. Eventually, the Port of Galilee was established in the mid 1800's as a small fishing village. By the early 1900's Point Judith's Port of Galilee became one of the largest fishing ports on the east coast. This was largely due to a series of construction projects that included dredging the present breachway and stabilizing it with stone jetties and the construction of three miles of breakwater that provided refuge from the full force of the ocean. By the 1930's wharves were constructed to facilitate large ocean-going fishing vessels (Eckilson 2007). At this point the port became important to the entire region's economy (Griffith and Dyer 1996). Today, Point Judith is not only an active commercial fishing port, but it supports a thriving tourism industry that includes restaurants, shops, whale watching, recreational fishing, and a ferry to Block Island. Point Judith sits on a knob of land that extends out into the open Atlantic Ocean, making it a popular spot for surfing if the ocean swell is angled properly to produce a breaking wave near the seawall.

Demographics³

No Census data are available for Point Judith itself, but they are available for the county subdivision Narragansett Town which includes Point Judith. As Point Judith is not actually a residential area, and those who fish from Point Judith live in surrounding communities, this is more representative of the "fishing community" than would be any data on Point Judith alone. However, it should be noted that fishermen fishing out of Point Judith are likely to live all over Rhode Island.

According to Census 2000 data, Narragansett had a total population of 16,361, up 9.2% from a reported population of 14,985 in 1990 (US Census Bureau 1990). Of this 2000 total, 48.6% were males and 51.4% were females. The median age was 36.4 years and 76.2% of the population was 21 years or older while 16.1% were 62 or older.

The population structure of Narragansett (see Figure 1) had an unusually high percentage of the population in the 20-29 year age group, far outnumbering all other age categories. This is likely due to the presence of nearby University of Rhode Island; many students at the university live in Narragansett. Others may stay in the area for employment after graduation, which would also contribute to the population structure.

³ While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

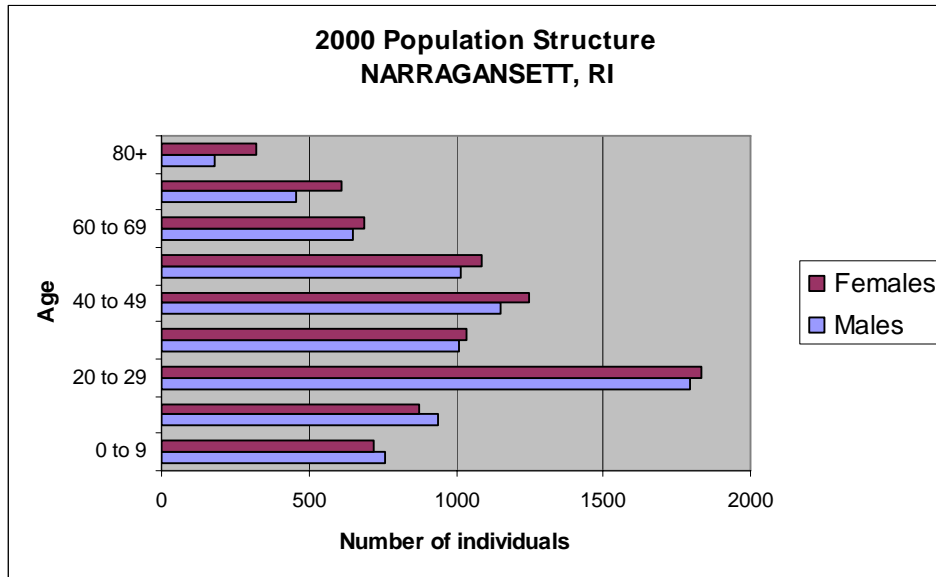


Figure 1. Narragansett's population structure by sex in 2000 (US Census Bureau 2000a)

The majority of the population was white (95.6%), with 1.3% black or African American, 1.0% Asian, 1.4% Native American, and 0.1% Pacific Islander or Hawaiian (see Figure 2). Only 1.2% of the population identified themselves as Hispanic/Latino (see Figure 3). Residents traced their backgrounds to a number of different ancestries including: Irish (31.8%), Italian (20.6%) and English (18.9%) (US Census Bureau 2000a).

With regard to region of birth, 62.5% were born in Rhode Island, 34.3% were born in a different state and 2.5% were born outside of the U.S. (including 0.8% who were not United States citizens).

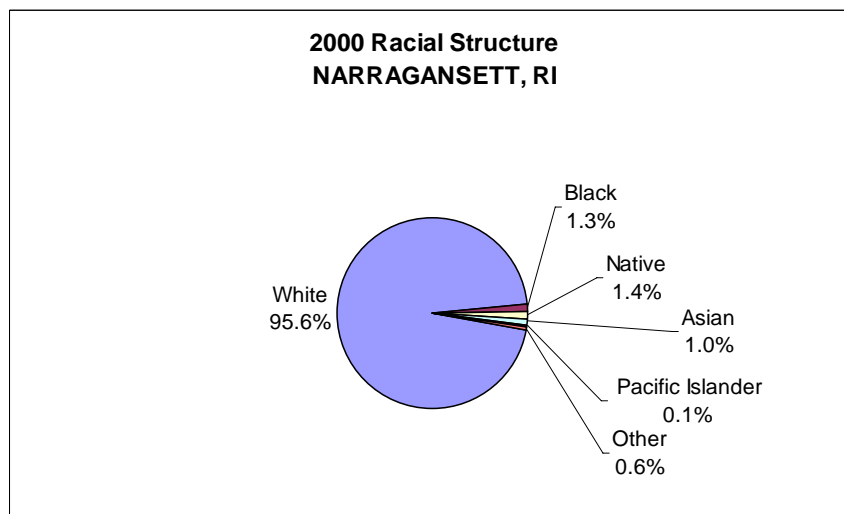


Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

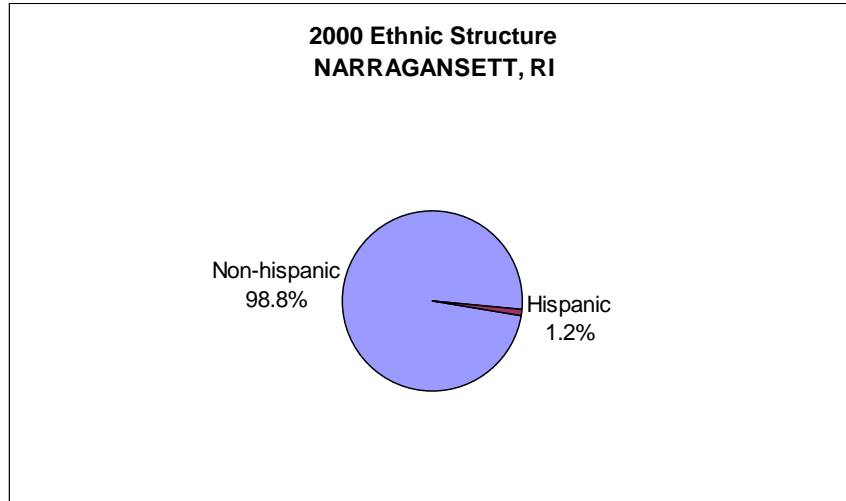


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 94.4% of the population, only English was spoken in the home, leaving 5.6% in homes where a language other than English was spoken, including 0.6% of the population who spoke English less than “very well” according to the 2000 Census.

Of the population 25 years and over, 91.3% were high school graduates or higher and 41.8% had a bachelor’s degree or higher. Again of the population 25 years and over, 2.1% did not reach ninth grade, 6.6% attended some high school but did not graduate, 22.5% completed high school, 18.0% had some college with no degree, 9.0% received their associate degree, 24.2% earned their bachelor’s degree, and 17.6% received either their graduate or professional degree.

Although religion percentages are not available through U.S. Census data, according to the Association of Religion Data Archives (ARDA) in 2000, the religion with the highest number of congregations and adherents in Washington County was Catholic with 20 congregations and 58,668 adherents. Other prominent congregations in the county were American Baptist Churches (15 congregations with 3,022 adherents) and Episcopal (10 with 4,720 adherents). The total number of adherents to any religion was up 57.3% from 1990 (ARDA 2000).

Issues/Processes

Not unlike many fishing communities in the Northeast, increasingly stringent state and federal fishing regulations could jeopardize the viability of Point Judith as a fishing port, affecting both commercial and recreational fishermen. In addition to affecting the fishermen directly, Point Judith processing companies have difficulty handling drastic deviations in the number of landings, commonly due to the lifting or expanding of quotas, as well as sudden changes in what species are landed. It is also important to note that Point Judith fishermen harvest both species managed by the New England Fishery Management Council and the Mid-Atlantic Fishery Management Council, which increases the level of management measures they must follow.⁴

⁴ Profile review comment, David Beutel, Fisheries Extension Specialist, RI Sea Grant, University of Rhode Island, South Ferry Road, Narragansett, RI 02882, August 23, 3007

Additionally, the boom in tourism at Point Judith has had an adverse effect on the commercial fishing industry. Not only do fishermen battle parking issues but shore front rents for fish processing companies and the cost of dockage and wharfage for vessels have increased (Griffith and Dyer 1996).

Cultural attributes

The Narragansett/ Point Judith community celebrates its maritime history with the annual Blessing of the Fleet (Griffith and Dyer 1996), an event that is sponsored by the [Narragansett Lions Club](#). The festival includes the Blessing of the Fleet Road Race of 10 miles of the surrounding area, a Seafood Festival, and rides at Veteran's Memorial Park that last throughout the last weekend of July. The 2004 Blessing of the Fleet included approximately 20 commercial and 70 recreational vessels and gathered an estimated crowd of 200 to 300 to view the passing. The Fishermen's Memorial Park is located in Point Judith and features recreational activities and a playground. Each Saturday in the summer months, the park hosts a Farmer's Market, featuring local produce and often lobsters caught on local vessels. There is a new fishermen's memorial project underway, to be situated near the Coast Guard light.⁵

INFRASTRUCTURE

Current Economy

Besides an active fishing port, Point Judith supports a thriving seasonal tourism industry that includes restaurants, shops, whale watching, recreational fishing, and a ferry to Block Island (Griffith and Dyer 1996). It also has a number of fish processing companies that do business locally, nationally, and internationally. Point Judith's largest fish processors are the [Town Dock Company](#) and the Point [Judith Fishermen's Company](#) – a subsidiary of M. Slavin & Sons based in NY.

Town Dock came to Point Judith in 1980 and is now one of the largest seafood processing companies in Rhode Island. Its facility supports unloading, processing, and freezing facilities under one roof and services “over half of the port's boats (approximately 30 full time deep sea fishing trawlers) as well as a large day-boat fleet . . . and handle[s] all the southern New England and Mid-Atlantic species of fish including Squid, Monkfish, Flounder, Whiting, Scup, Butterfish, and Fluke.”

The Point Judith Fishermen's Company (with approximately 15 employees) unloads boats and processes squid which are then taken by M. Slavin & Sons to sell wholesale at the Fulton Fish Market in NY.⁶ Handrigan's is another unloading facility located here.⁷ Several smaller processors are also located in the Point Judith area: Deep Sea Fish of RI, Ocean State Lobster Co., Narragansett Bay Lobster Co., Fox Seafood, South Pier Fish Company, Osprey Seafood, and Sea Fresh America (USFDA 2008). Paiva's Shellfish has their own lobster dock in Point Judith but in 2003 after some time experimenting with finfish for auction and horseshoe crabs for bait and biomedical purposes, they relocated to Cranston and became a wholesaler.^{8,9} Economic history up to 1970 can be found in Poggie and Gersuny (1978).

⁵ Profile review comment, David Beutel, Fisheries Extension Specialist, RI Sea Grant, University of Rhode Island, South Ferry Road, Narragansett, RI 02882, August 23, 3007

⁶ Phone conversation with employee (401-782-1500)

⁷ Profile review comment, David Beutel, Fisheries Extension Specialist, RI Sea Grant, University of Rhode Island, South Ferry Road, Narragansett, RI 02882, August 23, 3007

⁸ Phone call to owner, Stopped processing last year (401-941-3850)

According to the U.S. Census 2000¹⁰, of the total population 16 years of age and over, 67.0% were in the labor force (see Figure 4), of which 2.2% were unemployed, 0.2% were in the Armed Forces, and 64.6% were employed.

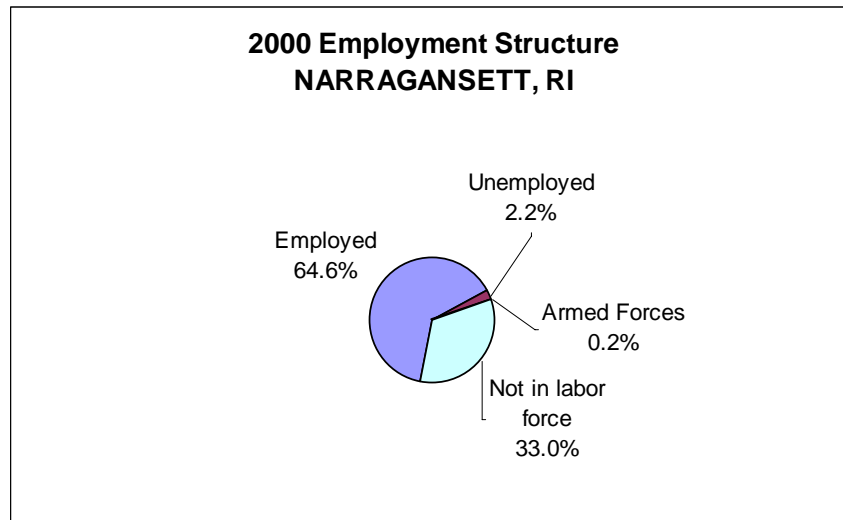


Figure 4. Employment structure in 2000 (US Census Bureau 2000a)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 239 positions or 2.7% of all jobs (the majority of which is likely to be fishing based on limited activity in the other categories)¹¹. Self employed workers, a category where fishermen might be found, accounted for 171 positions or 8.6% of jobs. Educational, health and social services (26.0%), arts, entertainment, recreation, accommodation and food services (11.8%), professional, scientific, management, administrative, and waste management services (10.8%), and retail trade (10.4%) were the primary industries.

Median household income in Narragansett was \$50,363, up 41.7% from \$35,545 in 1990 (US Census Bureau 1990) and median per capita income was \$28,194. For full-time year round workers, males made approximately 43.1% more per year than females.

The average family in Narragansett consisted of 2.86 persons. With respect to poverty, 4.9% of families, up from 2.9% in 1990 (US Census Bureau 1990) and 16.0% of individuals earned below the official U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 21.8% of all families (of any size) earned less than \$35,000 per year.

In 2000, Narragansett had a total of 9,159 housing units, of which 74.7% were occupied and 79.4% were detached one unit homes. Less than one tenth (9.8%) of these homes were built before 1940. Mobile homes, boats, RVs, vans, etc. accounted for 0.9% of the housing units;

⁹ Community Review Comments, Walter Anoushian, NMFS Port Agent, 83 State St 2nd Flr, P.O. Box 547, Narragansett, RI 02882-0547, January 31, 2008

¹⁰ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

¹¹ Profile review comment, Michael DeLuca, Town of Narragansett, Department of Community Development, 25 Fifth Avenue, Narragansett, RI 02882 December 18, 2007

90.3% of detached units have between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$163,500. Of vacant housing units, 88.0% were used for seasonal, recreational, or occasional use. Of occupied units, 38.1% were renter occupied.

Government

Narragansett's form of government is a town manager and a five-member town council, headed by a council president. Narragansett was established in 1888 and incorporated in 1901 (State of Rhode Island nd).

Fishery involvement in government

Narragansett has a town Harbor Management Commission and a designated Harbormaster. Narragansett has a town Harbor Management Commission, appointed by the Town Council (HMC nd). The Harbor Management Commission meets once each month to address issues related to management of the town's waters, particularly Point Judith Pond and the Narrow River. Galilee has special zoning which designates certain areas for fishing-related uses only.¹² NOAA Fisheries Statistics Office also has a port agent based here. Port agents sample fish landings and provide a 'finger-on-the-pulse' of their respective fishing communities (NERO FOS 2008). NOAA Northeast Fisheries Science Center's Narragansett Laboratory is located on the Bay Campus of the University of Rhode Island (URI). "It is adjacent to URI's Graduate School of Oceanography and the National Health and Environmental Effects Research Laboratory of the Environmental Protection Agency (EPA). The facility consists of one main building and aquarium, and four adjacent office/laboratory modular buildings. The laboratory is a facility with a specialized staff of 50 supported by advanced oceanographic and biological systems for carrying out research on the effects of changing environmental conditions on the growth and survival of fish stocks from an ecosystems perspective" (NEFSC nd). Rhode Island Sea Grant is also located at URI's Narragansett Bay Campus. The RI Department of Environmental Management Division of Enforcement has a small office in Point Judith.¹³

Institutional

Fishing associations

Point Judith Fishermen's Cooperative went defunct in 1994 as the victim of declining stocks¹⁴, and is now run as an independent fish marketing organization.¹⁵ Rhode Island Seafood Council, a now-defunct not-for-profit organization established in 1976, was located here and promoted quality seafood products. The American Seafood Institute was established in 1982 in conjunction with the Rhode Island Seafood Council and provides assistance to the fishing industry in exporting product overseas (Hall-Arber et al. 2001). The Point Club is a self-insurance group for fishermen to protect against price gouging, etc.¹⁶ The Rhode Island Commercial Fishermen's Association has members throughout Point Judith and the state. The

¹² Profile review comment, Michael DeLuca, Town of Narragansett, Department of Community Development, 25 Fifth Avenue, Narragansett, RI 02882 December 18, 2007

¹³ Profile review comment, David Beutel, Fisheries Extension Specialist, RI Sea Grant, University of Rhode Island, South Ferry Road, Narragansett, RI 02882, August 23, 3007

¹⁴ Profile review comment, Chris Brown, Rhode Island Commercial Fishermen's Association, 35 Erica Court West Kingston, RI 02892, October 19, 2007

¹⁵ Personal communication, Dr. Madeleine Hall-Arber, MIT Sea Grant.

¹⁶ Profile review comment, Chris Brown, Rhode Island Commercial Fishermen's Association, 35 Erica Court West Kingston, RI 02892, October 19, 2007

organization is based at the Commercial Fisheries Center at East Farm on the University of Rhode Island's main campus. The Rhode Island Lobstermen's Association and the Rhode Island Fishermen's Alliance are well represented in Point Judith, and the RI Shellfishermen's Association is likely to also have members fishing from here.¹⁷

Fishing assistance centers

The Bay Company was developed under the Rhode Island Marine Trade Education Initiative and attempts to link academia to the marine industry to improve productivity and economic viability; it is now defunct since the funding disappeared in 2003 (Hall-Arber et al. 2001).

Other fishing related organizations

The [Commercial Fisheries Center of Rhode Island](#) was founded in 2004 and is home to nonprofit commercial fishing organizations, and serves "as a headquarters for bringing fishermen, scientists, managers, and elected officials together to discuss issues." The goals of the center are "to improve fisheries and understanding of the marine environment through education, collaborative research, and cooperation" (CFCRI nd).

Physical

Point Judith is about 22 miles from Newport, 36 miles from Providence, and 52 miles from New Bedford. TF Green Airport in Warwick, RI is about 25 miles from Point Judith, and Westerly State Airport, a smaller airport, is 17 miles away. A ferry runs from Block Island to Point Judith. From Block Island it is possible to take another ferry to Montauk, NY (BICC 2007; RIPTA nd; State of Rhode Island nd). The Rhode Island Public Transportation Association (RIPTA) runs a bus to Galilee. Buses to other New England destinations are available at T.F. Green airport and from Newport and Providence (RIPTA nd; State of Rhode Island nd). Point Judith also boasts a lighthouse that doubles as a popular surfing spot.

Great Island Road at Point Judith has several docking facilities for both commercial and charter vessels (DEM 2005a). There is a marine supply store where most fishermen shop, and a commercial bait store serving the local trap fishermen. In addition to the dockside infrastructure, there are seasonal restaurants along the main street area and tourism predominately from the ferry crowds the streets and often frustrates residents in the summer.¹⁸ The Point Judith Fishermen's Company unloads boats and processes squid which are then taken by M. Slavin & Sons to sell wholesale at the Fulton Fish Market in NY.¹⁹ Handrigan's is another unloading facility located here.²⁰ Several smaller processors are also located in the Point Judith area: Deep Sea Fish of RI, Ocean State Lobster Co., MC Fresh Inc., Narragansett Bay Lobster Co., Inc., Fox Seafood, South Pier Fish Company, Osprey Seafood, and Sea Fresh America (USFDA 2008). In 2003 Paiva's Shellfish quit the fillet business and relocated to Cranston as a wholesaler.²¹ [Trawlworks, Inc.](#) in Narragansett is a supplier and distributor of marine hardware and rigging supplies for industrial, institutional, and commercial fishing for both mid-water and bottom use.

¹⁷ Profile review comment, David Beutel, Fisheries Extension Specialist, RI Sea Grant, University of Rhode Island, South Ferry Road, Narragansett, RI 02882, August 23, 3007

¹⁸ Pers. Comm. Point Judith resident, 06/29/2007

¹⁹ Phone conversation with employee (401-782-1500)

²⁰ Profile review comment, David Beutel, Fisheries Extension Specialist, RI Sea Grant, University of Rhode Island, South Ferry Road, Narragansett, RI 02882, August 23, 3007

²¹ Phone call to owner, Stopped processing last year (401-941-3850)

The corporation was formed in 1980. Superior Trawl is also located in Narragansett, and builds fishing gear sold throughout New England and the Mid-Atlantic. Wilcox Marine Supply, located in Point Judith, supplies vessels, and The Bait Company sells bait to local lobstermen.²² Point Judith Marina has been designated as a “Clean Marina” by the State of RI (CMRC 2008).

INVOLVEMENT IN NORTHEAST FISHERIES²³

Commercial

According to the RI Department of Environmental Management, the number of commercial vessels in port in Galilee (Point Judith) 2004 was 230 (RIDEM 2004). Vessels ranged from 45-99 feet, with most being groundfish trawlers. Of these, 55 were between 45 and 75 feet, and 17 over 75 feet (Hall-Arber et al. 2001). In 2004, Point Judith was ranked 24th in value of landings by port in the U.S. (sixth on the East Coast) (FUS 2007).

The state's marine fisheries are divided into three major sectors: shellfish, lobster, and finfish. The shellfish sector includes oysters, soft shell clams, and most importantly, quahogs. The lobster sector is primarily comprised of the highly valued American lobster with some crabs as well. The finfish sector targets a variety of species including winter, yellowtail and summer flounder, tautog, striped bass, black sea bass, scup, bluefish, butterfish, squid, whiting, skate, and dogfish. A wide range of gear including otter trawl nets, floating fish traps, lobster traps, gill nets, fish pots, rod and reel, and clam rakes are used to harvest these species. The state currently issues about 4,500 commercial fishing licenses (Lazar and Lake 2001).

Over the ten year period from 1997-2006, the value of landings in Point Judith varied but seemed to show a declining trend between 1997-2006, from a high of just over \$51 million to a low of \$31 million in 2002-2003. However, in 2004 the landings value began to increase again, back to just under \$47 million in 2006. The landings value for the squid, mackerel, and butterfish species grouping was higher in 2006 than the average value for 1997-2006 (see Table 1). The value of lobster in 2006, second most valuable in terms of landings, was lower in 2006 than the average value for the same time period. Vessel data is combined here for Point Judith and Narragansett; there are no vessel owners listed for Point Judith (because the name refers only to the port), indicating that many fishermen live in the Narragansett area and fish out of Point Judith. In total, the number of vessels home ported in either Point Judith or Narragansett reached a high of 186 in 2001, and a low of 168 in 2006. The number of vessels with owners living in Narragansett was much lower in all years than the number of vessels home ported here, indicating that many of the vessels in Point Judith have owners residing in other communities.

²² Profile review comment, David Beutel, Fisheries Extension Specialist, RI Sea Grant, University of Rhode Island, South Ferry Road, Narragansett, RI 02882, August 23, 3007

²³ In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

Landings by Species

Table 1. Dollar value of Federally Managed Groups of landings in Point Judith

	Average from 1997-2006	2006 only
Squid, Mackerel, Butterfish	11,298,781	13,188,211
Lobster	11,022,301	8,675,086
Summer Flounder, Scup, Black Sea Bass	4,718,136	6,495,568
Smallmesh Groundfish²⁴	2,816,677	1,799,479
Monkfish	2,687,563	2,110,227
Largemesh Groundfish²⁵	2,451,647	3,383,452
Other²⁶	2,056,576	2,697,425
Scallop	1,457,702	7,420,396
Skate	618,033	604,990
Herring	470,065	376,506
Tilefish	230,142	32,985
Bluefish	112,378	118,466
Dogfish	48,031	45,000
Red Crab	9,593	0

Vessels by Year²⁷

Table 2. All columns represent vessel permits or landings value between 1997 and 2006 for Point Judith/Narragansett

Year	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port (\$)	Level of fishing landed port (\$)
1997	181	61	33,021,800	47,529,746
1998	175	55	32,870,223	42,614,251
1999	181	60	36,324,182	51,144,479
2000	184	61	33,911,658	41,399,853
2001	186	62	30,121,535	33,550,542
2002	179	53	30,014,709	31,341,472
2003	173	52	32,793,425	31,171,867
2004	174	51	37,058,022	36,016,307
2005	171	52	37,150,241	38,259,922
2006	168	51	41,021,147	46,947,791

(Note: # Vessels home ported = No. of permitted vessels with location as homeport

Vessels (owner's city) = No. of permitted vessels with location as owner residence²⁸

Level of fishing home port (\$) = Landed value of fisheries associated with home ported vessels

Level of fishing landed port (\$) = Landed value of fisheries landed in location)

²⁴ Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

²⁵ Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

²⁶ "Other" species includes any species not accounted for in a federally managed group

²⁷ Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

²⁸ The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

Recreational

Rhode Island marine waters also support a sizable recreational fishing sector. “In Rhode Island, nearly 362,000 recreational marine anglers - more than half from out-of-state - made over 1.5 million trips, catching 4.3 million pounds of sport fish and releasing about 55 percent in 2004” (RIDEM 2004). This indicates that the recreational component is significant both in terms of the associated revenues generated (support industries) and harvesting capacity. Between 2001- 2005, there were 66 charter and party vessels making 7,709 total trips registered in logbook data by charter and party vessels in Point Judith carrying a total of 96,383 anglers (MRFSS data). A 2005 survey by the RI Dept. of Environmental Management showed Point Judith to be the most popular site in the state for shore based recreational fishing (RIDEM 2005). Narragansett has two public saltwater boat ramps (RIDEM 2005a).

Subsistence

Observations by local officials indicate subsistence fishing occurs around Narragansett. Most subsistence fishermen fish at night and in the early morning. No data has been collected on this practice.²⁹

FUTURE

Point Judith fishermen are not very positive about the future of Point Judith as a fishing port. Besides the main concern of stringent fishing regulations Point Judith fishermen also must contend with the ever increasing tourism at the port. This has caused parking issues and rent increases.

Oceanlinx Limited (formerly Energetech Australia) is a wave power company working on a pilot project to build and install a wave power plant off Point Judith. Called “Project GreenWave”, the effort is a non-profit pilot, with funding from Massachusetts, Rhode Island and Connecticut and would become the first wave power installation in the U.S. if successful. As the effort is a first, there has been confusion over whether the regulatory jurisdiction is state or federal, which has slowed the projects commencement. “The station would be located just outside the Point Judith breakwater and about a mile offshore. Care is being taken not to disrupt commercial ship traffic or recreational boaters. The station will be designed to: withstand ‘100 year storm criteria’, be easily towed to port, make 100 times less noise than an outboard motor; and have only one moving part — the turbine.” (RD 2007) In addition, the Rhode Island Wind Energy Project has mapped several potential sites for future wind turbine placement offshore; one of the possible sites is just off Point Judith (ATM 2007).

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STONINGTON, CT¹

Community Profile²

PEOPLE AND PLACES

Regional orientation

The city of Stonington, Connecticut (41.20°N, 71.54°W) is located in New London County (USGS 2008). The town is 16 miles from New London, CT, 48 miles from Providence, RI, and 61 miles from Hartford, CT (MapQuest 2006). Stonington covers 42.7 square miles and includes the villages of Mystic, Old Mystic, Stonington Borough, and Pawcatuck (Sabin 2008).



Map 2. Location of Stonington, CT (US Census Bureau 2000a)

Historical/Background

The town of Stonington, founded in 1649, encompasses several villages: the Borough of Stonington; Pawcatuck, (home to many industries); Old Mystic; and Mystic (east of the Mystic River). An area that has at one time had both a large whaling and fishing industry, Stonington is home to Connecticut's last commercial fishing fleet. Many of Stonington's early fishermen were Portuguese. As fish were depleted in the 1950s, the industry took a downturn, and the fleet went from 40 trawlers to nine. The fishermen seem to have strong local support, however. The town leases the docks to the fishermen, and in 2001 they signed a 20 year lease, indicating cooperation between the town and the fishing industry (Ross 2001).

¹ These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

² For purposes of citation please use the following template: "Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov."

Demographics³

According to Census 2000 data⁴, Stonington had a total population of 17,906, up 5.8% from the reported population of 16,924 in 1990 (US Census Bureau 1990). Of this 2000 total, 48.6% were males and 51.4% were females. The median age was 41.7 years and 76% of the population was 21 years or older while 20.4% was 62 or older.

Stonington's age structure (see Figure 1) shows peak in the population between the ages of 40 to 49. The age group of 20-29 is smaller compared to the other age groups, indicating that young people are leaving the community after high school.

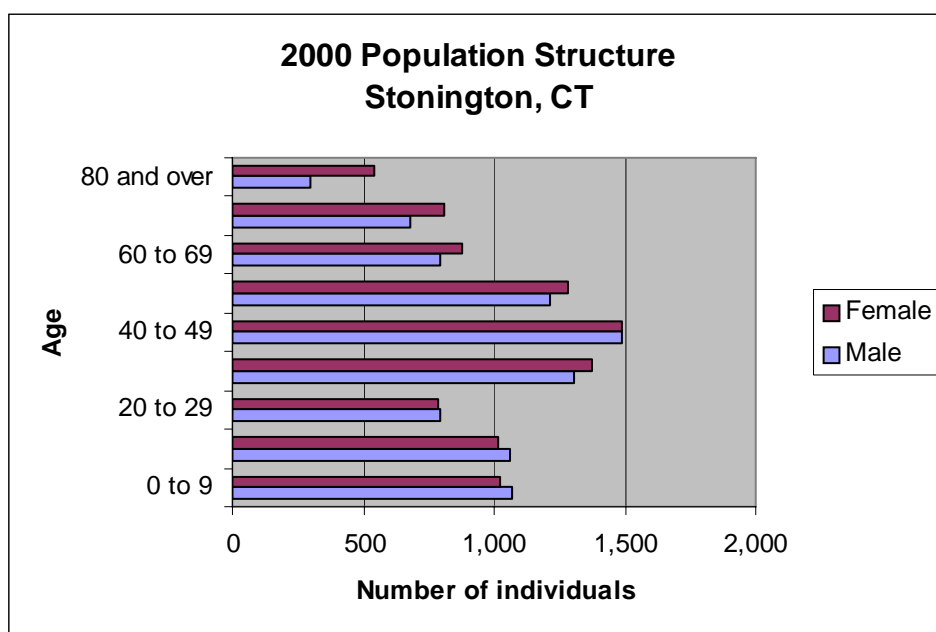


Figure 1. Stonington's population structure by sex in 2000 (US Census Bureau 2000)

The majority of the population was white (95.8%) with 0.6% of residents black or African American, 1.3% Asian, 0.4% Native American, and 0.1% Pacific Islander or Hawaiian (see Figure 2). Only 1.3% of the population identified themselves as Hispanic/Latino (see Figure 3). Residents linked their backgrounds to a number of different ancestries including: Irish (22.5%), English (18.8%), Italian (16.4%), German (12.1%) and Portuguese (7%). With regard to region of birth, 37.3% were born in Connecticut, 56.7% were born in a different state and 5.2% were born outside of the U.S. (including 2% who were not United States citizens).

³ While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

⁴ These and all census data, unless otherwise referenced, can be found at U.S. Census: American Factfinder 2000 <http://factfinder.census.gov/home/saff/main.html>; census data used are for Stonington town, New London county; this census data is at the level of County Subdivision.

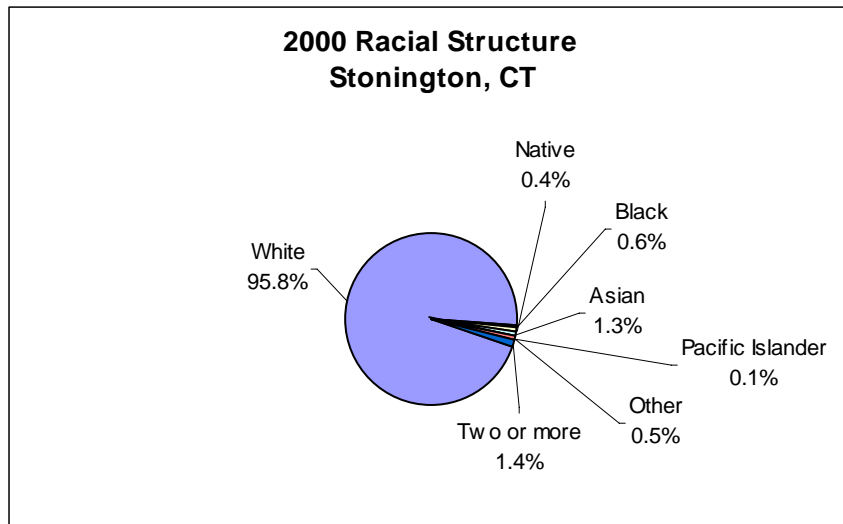


Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

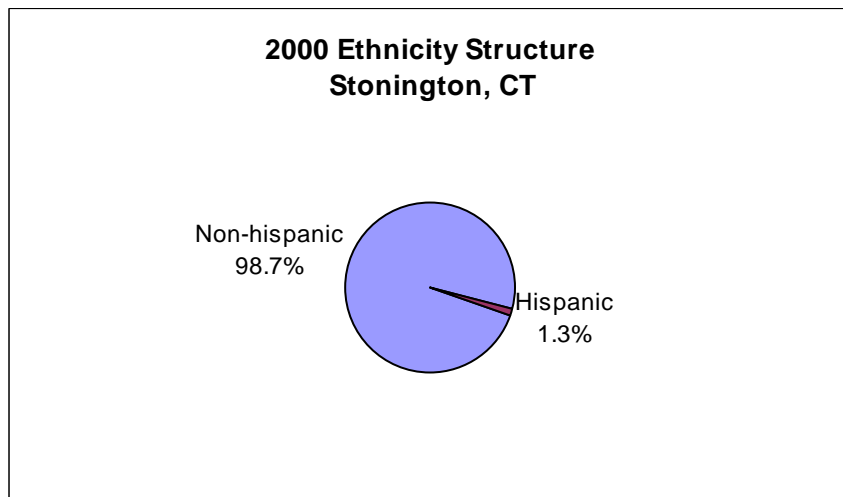


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 92.5% of the population, only English was spoken in the home, leaving 7.5% in homes where a language other than English was spoken, including 2.8% of the population who spoke English less than “very well” according to the 2000 Census.

Of the population 25 years and over, 88.2% were high school graduates or higher and 34.6% had a bachelor’s degree or higher. Again of the population 25 years and over, 5% did not reach ninth grade, 6.8% attended some high school but did not graduate, 28.5% completed high school, 17.7% had some college with no degree, 7.4% received their associate’s degree, 19.2% earned their bachelor’s degree, and 15.4% received either their graduate or professional degree.

Although religion percentages are not available through the U.S. Census, according to the Association of Religion Data Archives (ARDA) in 2000, the religion with the highest number of congregations and adherents in New London County was Catholic with 33 congregations and 80,563 adherents. Other prominent congregations in the county were The United Church of Christ (20 with 6,809 adherents), and American Baptist Churches in the USA (19 with 6,502 adherents). The total number of adherents to any religion was down 0.3% from 1990 (ARDA 2000).

Issues/Processes

One issue affecting the fishing industry in Stonington is the continued gentrification and resulting increased housing and property prices around the waterfront. Although most fishing activity is based at the Town Dock which is leased from the town, the escalating cost of housing is forcing many fishermen to move away from the waterfront area (Hall-Arber et al. 2001).

Within the Stonington area, the Pentagon recently included the Naval Submarine Base in nearby Groton on its list of potential base closures, which could have had a significant economic impact on the region. The departure of one of the area's largest employers could have resulted in a loss of thousands of jobs (Baldor 2005). Eventually, the base was removed from the closure list, and is presently working with the Pentagon to upgrade the facilities for future stability.⁵

Cultural attributes

Every year, the last week end in July, the annual Blessing of the Fleet remembers Stonington's fishermen who have died at sea in a two-day celebration with parades, bands, food, music, dancing on the docks, and a Sunday Mass (Ross 2001). [Mystic Seaport](#) in the village of Mystic celebrates seafaring life with a recreation of a historic whaling village and historic tall ships and other restored vessels. The [Mystic Aquarium/Institute for Exploration](#) in Mystic is dedicated to inspiring people to care about and protect the oceans through educating them about the underwater world.

INFRASTRUCTURE

Current Economy

Major industries in the Stonington area which employ large numbers of residents are the defense industry, based in nearby Groton and New London, and the gaming industry, with two large casinos (Foxwoods, Mohegan Sun) located a short distance away (seCTer 2005).

According to the U.S. Census 2000⁶, 65% (14,450 individuals) of the total population 16 years of age and over were in the labor force (see Figure 4), of which 2% were unemployed, 0.5% were in the Armed Forces, and 62.5% were employed.

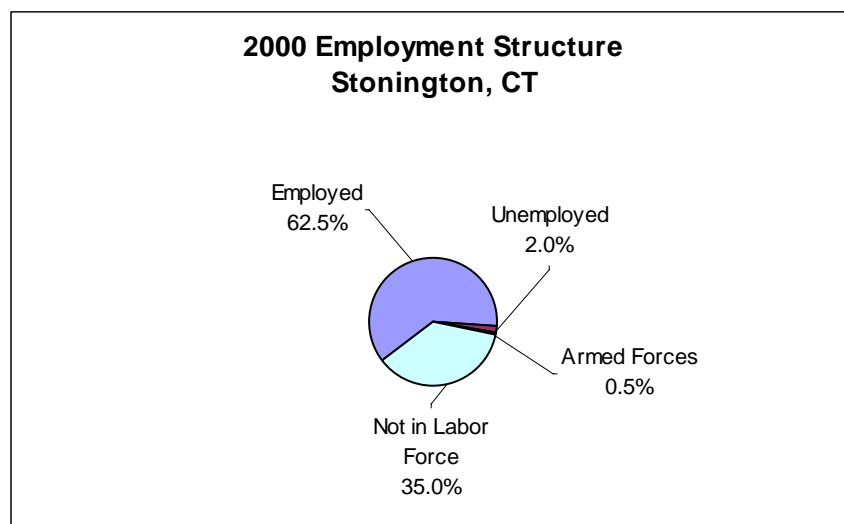


Figure 4. Employment Structure in 2000 (US Census Bureau 2000)

⁵ Profile review comments, Eric Donch, harbormaster, 220 S. Anguilla Road, Pawcatuck, CT 06379, October 29, 2007

⁶ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 48 positions or 0.5% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 683 positions or 7.6% of jobs. Educational, health and social services (20.4%), manufacturing (19.3%), and entertainment, recreation, accommodation and food services (15.9%) were the primary industries.

Median household income in Stonington was \$52,437 (up 32.2% from \$39,664 in 1990 [US Census Bureau 1990]) and median per capita income was \$29,653. For full-time year round workers, males made approximately 42.2% more per year than females.

The average family in Stonington consisted of 2.88 persons. With respect to poverty, 2.9% of families (down from 15.9% in 1990 [US Census Bureau 1990]) and 5% of individuals earn below the U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9 [US Census Bureau 2000a]). In 2000, 19.3% of all families (of any size) earned less than \$35,000 per year.

In 2000, Stonington had a total of 8,591 housing units of which 89.2% were occupied and 67.8% were detached one unit homes. Approximately one-third (35%) of these homes were built before 1940. Mobile homes, vans, and boats accounted for 3.1% of housing units; 83.9% of detached units have between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$168,200. Of vacant housing units, 5.6% were used for seasonal, recreational, or occasional use. Of occupied, units 29.3% were renter occupied.

Government

Stonington's local government is comprised of three Selectmen and a town clerk (Town of Stonington 2004).

Fishery involvement in government

The [Town of Stonington Shellfish Commission](#) regulates the harvest of clams, oysters, scallops, and other shellfish within the town waters. The Commission provides permits for both recreational and commercial shellfishing as well as for aquaculture operations for raising shellfish. The town of Stonington has a harbormaster; there are also harbormasters listed for Mystic and Pawcatuck (CTDOT 2008).

Institutional

Fishing associations

The Southern New England Fishermen and Lobstermen Association (SNEFLA) is located in Stonington alongside the Town Dock, and consists of a president, vice-president, and a nine-person board of directors who are elected annually. The approximately 125 members come from Connecticut, Rhode Island, and Massachusetts. Started in 1931, the original goal of the organization was to assist fishermen and lobstermen with the common problems like the hijacking of trucked shipments of fish to New York. Members must pay \$100 to join, and then \$20 annually. Stonington Pier grants tie-up space to members of SNEFLA (Hall-Arber et al. 2001).

Fishing assistance centers

Information on fishing assistance centers in Stonington is unavailable through secondary data collection.

Other fishing related organizations

The Portuguese Holy Ghost Society in Stonington was founded in 1914, and is made up of Stonington residents of Portuguese descent (Boylan 1987). The society serves as a social nexus to many of the town's fishermen (Hall-Arber et al. 2001).

Physical

Stonington lies within two hours or less of major research and transportation centers in Boston, Providence, New Haven, Hartford and New York. In addition, Interstate 95 passes through the town. Major airports are located nearby in Groton, Hartford/Springfield, Providence and Boston. Amtrak trains are located in Mystic, New London and Westerly (Hall-Arber 2001).

Stonington town dock fishing pier and memorial is situated in the quaint fishing village of Stonington Borough. Although much of the waterfront property in this village has been converted to residential dwellings, there is still an active marine commercial fishing fleet in the harbor (CTDEP 2007). Stonington's infrastructure consists of a town-owned central fishing wharf (Town Dock) with two processing facilities at which most of the fleet is docked (Hall-Arber et al. 2001).

INVOLVEMENT IN NORTHEAST FISHERIES⁷

Commercial

Stonington has a diversified fishing fleet, which includes gillnetters, draggers, and lobster fishermen (Hall-Arber et al. 2001). [Stonington Seafood Harvesters Inc.](#) is a family operated sea scallops wholesaler and retailer located in Stonington. Bait and tackle stores are found in town (CTDEP 2008).

For 1997-2006, scallops were by far the most significant species landed in Stonington, with average landings over \$5 million. The 2006 landings value was slightly higher than this ten-year average value. There were a wide variety of other species landed in Stonington; lobster, summer flounder, scup, and black sea bass, monkfish, largemouth groundfish, smallmouth groundfish, and squid, mackerel, and butterfish all had average landings values of at least \$400,000 (see Table 1). Stonington has several commercially-operated aquaculture facilities, raising and harvesting shellfish in the town waters, and regulated by the town's shellfish commission. Scallops are also commercially harvested within the waters regulated by the town (Town of Stonington Shellfish Commission, no date). Overall, landings in Stonington demonstrated an increasing trend until 2004, when landings were at over \$12 million; they fell off slightly in 2005 and 2006 (see Table 2). The level of home port fishing in all years was significantly lower than the level of landings. Home port fishing was at its highest in 2004 and 2005, at \$2 million and \$3.8 million respectively, but the landings in 2006 had fallen to just over \$100,000. This indicates that most vessels landing in Stonington are home ported elsewhere. There were a number of home ported vessels in Stonington, falling from a high of 24 in 1997 to a low of 17 in 2006. In every year the number of home

⁷ In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

ported vessels far exceeded the owner's city vessels, indicating that many vessel owners reside in other communities.

Landings by Species

Table 1. Dollar value by Federally Managed Groups of landings in Stonington

	Average from 1997-2006	2006 only
Scallop	5,268,459	5,690,408
Lobster	969,486	800,218
Summer Flounder, Scup, Black Sea Bass	669,818	759,058
Monkfish	548,713	107,636
Smallmesh Groundfish⁸	482,725	164,166
Largemesh Groundfish⁹	473,867	234,212
Squid, Mackerel, Butterfish	445,394	275,485
Other¹⁰	122,965	104,074
Skate	108,756	37,315
Tilefish	6,497	914
Bluefish	4,529	5,839
Herring	3,891	3,518
Dogfish	3,534	13,878
Red Crab	84	0

Vessels by Year¹¹

Table 2. All columns represent vessel permits or landings value combined between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port (\$)	Level of fishing landed port (\$)
1997	24	10	990,539	6,594,784
1998	19	9	418,333	6,940,038
1999	21	11	87,921	8,697,638
2000	19	11	620,660	9,733,402
2001	20	10	1,146,206	9,898,776
2002	23	12	1,737,018	8,479,559
2003	21	12	823,807	9,411,356
2004	23	12	2,043,818	12,376,800
2005	22	12	3,793,828	10,758,099
2006	17	6	105,746	8,196,721

(Note: # Vessels home ported = No. of permitted vessels with location as homeport

Vessels (owner's city) = No. of permitted vessels with location as owner residence¹²

Level of fishing home port (\$) = Landed value of fisheries associated with home ported vessels

Level of fishing landed port (\$) = Landed value of fisheries landed in location)

⁸ Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

⁹ Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

¹⁰ "Other" species includes any species not accounted for in a federally managed group

¹¹ Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

¹² The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

Recreational

There are two charter fishing vessels listed for Stonington (CCPBA 2004). Stonington also has a number of residents and visitors participating in recreational shellfishing which is regulated by the town's shellfish commission (Town of Stonington Shellfish Commission, no date).

Subsistence

Information on subsistence fishing in Stonington is either unavailable through secondary data collection or the practice does not exist.

FUTURE

The Town of Stonington is attempting to receive federal funding to expand the town dock to permit more vessels to dock there. An initial request for funding as part of a transportation appropriations bill was originally rejected by the House of Representatives in 2004.

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MONTAUK, NY¹

Community Profile²

PEOPLE AND PLACES

Regional orientation

Montauk (41.00°N, 71.57°W) is located in Suffolk County at the eastern tip of the South Fork of Long Island in New York. It is situated between the Atlantic Ocean to the south, and Block Island Sound to the north, about 20 miles off the Connecticut coast. The total area of Montauk is about 20mi², of which 2.3 mi² of it (11.5%) is water (USGS 2008).



Map 1. Location of Montauk, NY

Historical/Background

Montauk was originally inhabited by the Montauket tribe, who granted early settlers permission to pasture livestock here, essentially the only function of this area until the late 1800s. The owner of the Long Island Railroad extended the rail line here in 1895, hoping to develop Montauk “the first port of landing on the East Coast, from which goods and passengers would be transported to New York via the rail. While his grandiose vision was not fulfilled, the rail provided the necessary infrastructure for the transportation of seafood, and Montauk soon became the principal commercial fishing port on the East End. In the early 1900s, the railroad also brought recreational fishermen to the area from the city by the car-load aboard the

¹ These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

² For purposes of citation please use the following template: “Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov.”

‘Fishermen’s Special’, depositing them right at the dock where they could board sportfishing charter and party boats.” Montauk developed into a tourist destination around that time, and much of the tourism has catered to the sportfishing industry since (Montauk Sportfishing 2005).

Demographics³

According to Census 2000 data, Montauk had a total population of 3,851, up 28.3% from a reported population of 3,001 in 1990. Of this 2000 total, 51.3% were males and 48.7% were females. The median age was 39.3 years and 77.4% of the population was 21 years or older while 17.7% were 62 or older.

Montauk’s age structure (Figure 1) showed large variation between sexes in different age groups. It is important to note that the differences appear dramatic because this population is small. In the age group including people from 20 to 29 years old, there were more than twice as many males as females in Montauk. A similar pattern exists in the 30 to 39 year age group. This is probably because males come to the area to work after high school for demanding labor jobs such as landscaping and construction. Females do not traditionally seek after these types of jobs that are available in Montauk.

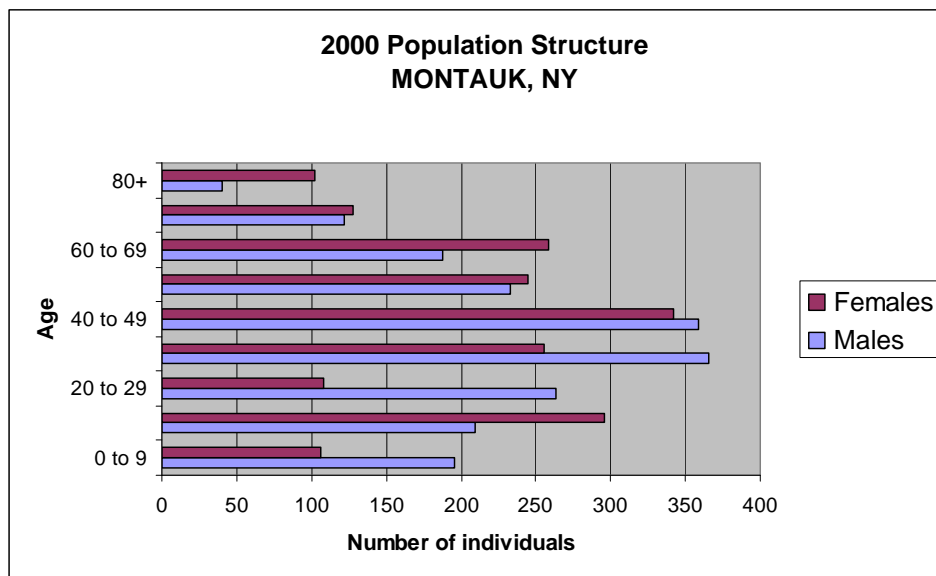


Figure 1. Montauk’s population structure by sex in 2000 (US Census Bureau 2000)

The majority of the population of Montauk was White (88.2%), with 0.9% of residents Black or African American, 0.1% Native American, 0.8% Asian, and none Pacific Islander or Hawaiian (Figure 2). A reported 23.9% of the population identified themselves as Hispanic/Latino (Figure 3). Residents linked their backgrounds to a number of different ancestries including: Irish (26.5%), German (17.3%) and Italian (13.1%). With regard to region of birth, 61.1% were born in New York, 11.1% were born in a different state and 27.0% were born outside of the U.S. (including 21.2% who were not United States citizens).

³ While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

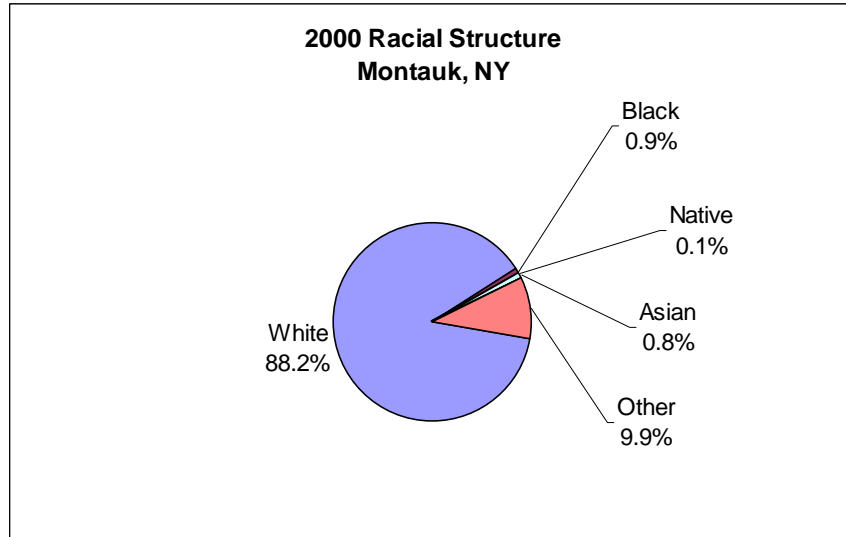


Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

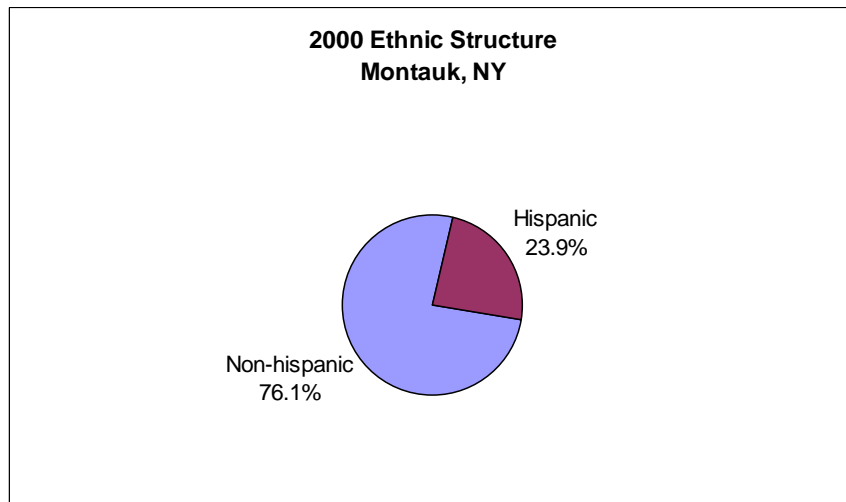


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 69.7% of the population, only English was spoken in the home, leaving 30.3% in homes where a language other than English was spoken, including 15.6% of the population spoke English less than “very well” according to the 2000 Census.

Of the population 25 years and over, 84% were high school graduates or higher and 24.8% had a bachelor’s degree or higher. Again of the population 25 years and over, 7.6% did not reach ninth grade, 8.4% attended some high school but did not graduate, 31.9% completed high school, 19.6% had some college with no degree, 7.8% received an associate’s degree, 17.0% earned a bachelor’s degree, and 7.8% received either a graduate or professional degree.

Although religion percentages are not available through the U.S. Census, according to the Association of Religion Data Archives (ARDA) in 2000, the religion with the highest number of congregations and adherents in Suffolk County was Catholic with 72 congregations and 734,147 adherents. Other prominent congregations in the county were Jewish (48 with 100,000 adherents), United Methodist (47 with 22,448 adherents), Episcopal (40 with 16,234 adherents),

Evangelical Lutheran Church (26 with 19,378 adherents), and Muslim (9 with 12,139 adherents). The total number of adherents to any religion was up 3.8% from 1990 (ARDA 2000).

Issues/Processes

Some fishermen are concerned about the accuracy of their assigned historical landings by species for fisheries (often used for promulgating new regulations), as the method used to land fish in New York varies from that in most other states. Called the “box method” it involves fish being boxed at sea, then landed at a consignment dock and from there shipped to Hunts Point Market in the Bronx, New York. Prior to the implementation of dealer electronic reporting NMFS port agents counted the number of boxes landed from each vessel and received a species breakdown from the dock manager (who did not open the boxes but rather based the breakdown on his knowledge of the vessel’s general fishing patterns). This system allowed greater potential for accidental misreporting. Now, the boxes are landed at the consignment dock and immediately shipped to Fulton, where the dealer opens the boxes and reports the landings. (Further, individual fishermen report using VTR, logbooks and other methods.)

While this method is more accurate in terms of the number and type of fish landed, it can still lead to another type of accidental reporting error. That is, landings are assigned to the incorrect state. This can have inequitable effects on states should an allocation scheme be developed, such as the one for summer flounder, that bases a state’s allocation on the landings of a particular species in that state.

The docks make money by charging \$10-12 per box (2007 prices) and by selling fuel. Catch limits and trip limits reduce the number of boxes to be shipped, and have made it very difficult for the docks to stay in business. New York is losing much of its infrastructure, and many of the docks have closed or changed hands in recent years.⁴

Inlet Seafood, the largest seafood packing operation in the state, recently expanded their facility to include a restaurant and convenience store, which met with considerable opposition from those living in the surrounding neighborhood, as residents were concerned about a resulting increase in traffic (Packer and McCarthy 2005). There are very strict zoning regulations in the town, which make it very difficult for any industry located on the waterfront to expand (McCay and Cieri 2000). There was also a bill proposed recently to limit beach access by vehicles in areas where coastal erosion is a problem, which would restrict access to many of the spots favored by surf casters in Montauk (Anonymous 2005a). There is also concern that recent regulations reducing allowable catches of certain species by recreational fishermen will have a negative impact on the party and charter fishing industry (Anonymous 2004).

The Long Island Power Authority is seeking permission to construct a wind farm off Long Island, a proposal which has met with opposition from commercial fishermen in Montauk and elsewhere on the island, because the turbines will block access to a highly productive squid fishery (Anonymous 2005b). The lobstermen working out of Montauk have seen their industry decline largely because of the prevalence of shell disease in lobsters taken from Long Island Sound (von Bubnoff 2005).

Cultural attributes

Montauk has several annual festivities that celebrate sport fishing and one that celebrates commercial fishing. The Blessing of the Montauk Fleet takes place in June. The Grand Slam Fishing Tournament has been in Montauk since 2002. The Harbor Festival at Sag Harbor, which

⁴ Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

is located next to Montauk, is celebrated in September. There is also a Redbone Fishing Tournament, the Annual Striped Bass Derby (13th year in 2005), and the Annual Fall Festival (24th year in 2005), which includes shellfish related activities such as a clam chowder festival and clam shucking (Montauk Chamber of Commerce nd). There is also a monument in Montauk dedicated to over 100 commercial fishermen from the East End who have lost their lives at sea over the years (Oles 2005).

INFRASTRUCTURE

Current Economy

The majority of the employers in Montauk are seasonal and dependent on the tourist industry, including restaurants and hotels. Probably the largest seasonal employer is Gurney’s Inn, which is a resort hotel, spa, and conference center, open year round, with 350 employees during the summer months.⁵ “With the exception of a few resorts and retail businesses, (Inlet Seafood) is one of the only full-time, year-round employers in Montauk, employing between four and six dock workers, a secretary, and a manager. All of the employees live in Montauk or East Hampton, but housing is a problem due to the high cost of living in the area. Labor turnover is low due to the ability of the dock to provide equitable wages and predictable pay throughout the year. The dock does compete with landscaping and construction companies for labor, especially from among immigrant populations. All of the dock workers are immigrants from Central and South America” (Oles 2005). Many of the fishermen have had to learn Spanish to communicate with the dock workers. This has been a dramatic change within the last 5 years, said NMFS port Agent Erik Braun. He also stated that there are no new fishermen starting up, and the children of fishermen, even those that are doing well, are not encouraged to enter into this business.⁶ The marinas here also employ a large number of people, including Montauk Marine Basin, with 21 employees during the summer months.⁷

According to the U.S. Census 2000⁸, 61.5% (1,944 individuals) of the total population 16 years of age and over were in the labor force (Figure 4), of which 7.7% were unemployed, none were in the Armed Forces, and 53.8% were employed.

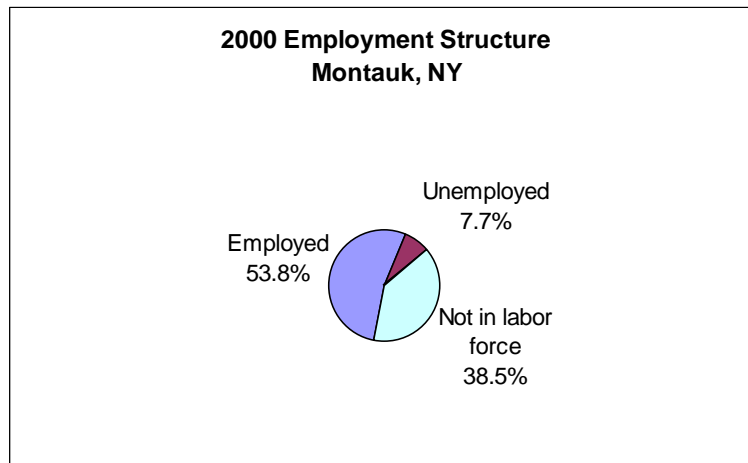


Figure 4. Employment Structure in 2000 (US Census Bureau 2000)

⁵ Personal communication, Gurney’s Inn, 290 Old Montauk Highway, Montauk, NY 11954, July 19, 2005.

⁶ Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

⁷ Personal communication, Montauk Marine Basin, 426 W. Lake Dr., Montauk, NY 11954, July 19, 2005

⁸ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 103 positions or 6.1% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 314 positions or 18.5% of jobs. Arts, entertainment, recreation, accommodation and food services (20.3%), construction (18.5%) and retail trade (10.1%) were the primary industries.

Median household income in Montauk was \$42,329 (up 32.9% from \$23,875 in 1990 [US Census Bureau 1990]). For full-time year round workers, males made approximately 41.6% more per year than females.

The average family in Montauk consists of 2.90 persons. With respect to poverty, 8.3% of families (unchanged from 1990 [US Census Bureau 1990]) and 10.6% of individuals earned below the official U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239-35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 40.0% of all families (of any size) earned less than \$35,000 per year.

In 2000, Montauk had a total of 4,815 housing units of which 33.1% were occupied and 61.7% were detached one unit homes. Less than 10% (9.4%) of these homes were built before 1940. Mobile homes, boats, RVs, and vans accounted for 4.0% of the total housing units; 84.1% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$290,400. Of vacant housing units, 62.9% were used for seasonal, recreational, or occasional use, while of occupied units 34.3% were renter occupied.

Government

Montauk is an unincorporated village within East Hampton Township. The Town Board runs the town (Town of East Hampton nd). The town was established in 1788. Although Montauk is not incorporated, there is one incorporated village situated within the East Hampton's borders, the Village of East Hampton, and part of a second village, Sag Harbor (Town of East Hampton nd).

Fishery involvement in government

The Town Board of East Hampton organized a “Fishing Committee” to represent the fishing industry’s interests in the development of the town’s comprehensive plan (Oles 2005).

Institutional

Fishing associations

The Long Island Commercial Fishing Association, located in Montauk, promotes commercial fishing throughout Long Island (Oles 2005). The Montauk Tilefish Association (MTA) “is a registered non-profit organization whose objective is to provide an organizational structure for making collective decisions for its members. “The MTA also provides member protection under the Fishermen’s Collective Marketing Act” (Oles 2005). Further, it “has worked to create and foster a fisheries management regime that is efficient and encourages resource stewardship at the local level. Other important outcomes from this collaboration include fresher fish for the market and a more stable operating environment” (Kitts et al. 2007).

The New York Seafood Council is the larger association representing fishing interests in the state. “The New York Seafood Council (NYSC) is an industry membership organization comprised of individuals, businesses, or organizations involved in the harvesting, processing, wholesale, distribution or sale of seafood products or services to the seafood industry in New York” (NYSC 2008).

Fishing assistance centers

Information on fishing assistance centers in Montauk is unavailable through secondary data collection.

Other fishing-related organizations

The Montauk Boatmen's and Captain's Association has a membership of over 100 captains of charter and party boats, and is one of the only organized, politically active charter boat associations in New York (Oles 2005). The Montauk Surfcasters Association is an organization of surf fishermen with over 900 members who wish to preserve their access to surf casting on the East End beaches of Long Island. They hold beach clean-ups and educate the public about the proper use of the beach (Montauk Surfcasters Association nd).

Physical

The fishing fleet is located in Lake Montauk, which opens to the north onto Block Island Sound. "Montauk is connected to points west via Route 27, and the Metropolitan Transportation Authority's Long Island Rail Road." Montauk Airport on East Lake Drive provides another mode of access to the area, but is strictly for small, private aircraft. On the easternmost tip of Long Island, Montauk is roughly 117 miles from New York City, but only about 20 miles by boat from New London, CT. There is one small airport in Montauk, and Long Island Islip MacArthur Airport is 67 miles away (MapQuest 2005). During the summers, a ferry service runs between Montauk and New London on weekends, daily to Block Island, RI, and occasionally to Martha's Vineyard (Viking Fleet nd). There are also three different ferry services that run between New London and nearby Sag Harbor (Easthampton.com nd). Most fish landed in Montauk is sold at the Fulton Fish Market in New York City (McCay and Cieri 2000).

The infrastructure needed for a commercial and sport fishing fleet is available in the village, including docks with off-loading facilities and other services that commercial fishermen need to land their catch (NYSC 2008). Montauk used to have five docks used by the commercial fishing industry for packing out fish, but they now only have two.⁹ Inlet Seafood Company, a corporation owned by six Montauk fishermen (NYSC 2008), includes a dock with unloading and other services, and is the largest fish packing facility in the state (Easthampton Star 2003). There is another dock servicing commercial fishermen, but this dock is barely surviving financially.¹⁰ There are also at least fourteen marinas used by the sportfishing industry (Oles 2005).

⁹ Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

¹⁰ Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

INVOLVEMENT IN NORTHEAST FISHERIES¹¹

Commercial

The village of Montauk is the largest fishing port in the state of New York. Montauk's main industry has been fishing since colonial times, and it continues to be an important part of its economy and traditions (Oles 2005). Montauk is the only port in New York still holding on to a commercial fishing industry.¹² Montauk's location naturally provides a large protected harbor on Lake Montauk and is close to important fishing grounds for both commercial and recreational fishermen.

Montauk has a very diverse fishery, using a number of different gear types and catching a variety of species; in 1998, there were a total of 90 species landed in Montauk (McCay and Cieri 2000). According to NMFS Landings Data, the top three valued fisheries in 2003 were Squid (\$2.3million), Golden Tilefish (\$2.1million), and Silver Hake (\$2.1million). There was a striking difference between the 2006 scallop landings value and the value for the 1997-2006 average. The 2006 values were over \$1.5 more than the nine year average (Table 1).

There used to be a number of longline vessels that fish out of Montauk, including 4-5 fishing for tilefish and up to 8 fishing for tuna and swordfish. Additionally, a number of longline vessels from elsewhere in New York State and New Jersey sometimes land their catch at Montauk (NYSC 2008). As of April 2007, there were 3 tilefish longliners in Montauk, one of which has bought out a fourth.¹³ There were also 35-40 trawlers based in Montauk, with a number of others that unload their catch here, and between 10-15 lobster vessels (NYSC 2008). The six owners of Inlet Seafood each own 1-2 trawlers.¹⁴ There are also a number of baymen working in the bays around Montauk catching clams, scallops, conch, eels, and crab as well as some that may fish for bluefish and striped bass. However, these baymen may move from one area to another depending on the season and fishery, and as a result may not be a part of the permanent fleet here (NYSC 2008).

The number of vessels home ported in Montauk showed a slightly decreasing trend between 1997 and 2006, while the number of vessels whose owner's city was Montauk showed a slight increasing trend over the same time period. Both the level of fishing home port and landed port also stayed fairly consistent, with a jump in 2005, but generally ranging from over \$9 million to over \$16 million for the 1997-2006 year period (Table 2).

¹¹ In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

¹² Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

¹³ José Montañez, MAFMC, April 18, 2007; NMFS landings data.

¹⁴ Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

Landings by Species

Table 1. Dollar value of Federally Managed Groups of landing in Montauk

	Average from 1997-2006	2006 only
Squid, Mackerel, Butterfish	3,146,620	3,640,565
Tilefish	2,366,489	2,942,310
Smallmesh Groundfish ¹⁵	2,028,574	1,198,711
Summer Flounder, Scup, Black Sea Bass	1,964,880	3,900,690
Other ¹⁶	1,652,214	1,379,958
Largemesh Groundfish ¹⁷	646,634	426,272
Lobster	585,627	613,598
Monkfish	373,486	643,731
Scallop	366,169	1,869,196
Bluefish	91,346	123,277
Skate	29,360	40,981
Dogfish	9,895	1,323
Herring	413	874
Surf Clams, Ocean Quahog	20	150
Salmon	9	90
Red Crab	5	CONFIDENTIAL

Vessels by Year¹⁸

Table 2. All columns represent vessel permits or landings value combined between 1997-2006

Year	# Vessels (home ported)	# vessels (owner's city)	Level of fishing home port (\$)	Level of fishing landed port (\$)
1997	165	89	9,222,288	13,556,572
1998	146	88	9,652,978	12,080,693
1999	158	98	10,863,508	12,124,707
2000	166	103	10,286,306	13,139,382
2001	160	103	12,302,916	13,231,619
2002	153	99	11,981,882	11,131,789
2003	152	104	12,405,663	11,033,366
2004	152	98	11,243,881	13,061,890
2005	144	96	14,104,902	16,475,642
2006	145	96	13,517,890	16,781,742

Vessels home ported = No. of permitted vessels with location as homeport

Vessels (owner's city) = No. of permitted vessels with location as owner residence¹⁹

Level of fishing home port (\$) = Landed value of fisheries associated with home ported vessels

Level of fishing landed port (\$) = Landed value of fisheries landed in location

¹⁵ Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

¹⁶ "Other" species includes any species not accounted for in a federally managed group

¹⁷ Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

¹⁸ Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

¹⁹ The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

Recreational

Montauk is the home port of a large charter and party boat fleet, and a major site of recreational fishing activity (Oles 2005). The facilities supporting the recreational fishing industry include six bait and tackle shops and 19 fishing guide and charter businesses.

According to one website there are at least 27 fishing charters in Montauk. Montauk has been called the “sport fishing capital of the world”, and even has its own magazine dedicated to Montauk sportfishing (Montauk Sportfishing nd). Between 2001- 2005, there were 122 charter and party vessels making 18,345 total trips registered in logbook data by charter and party vessels in Montauk carrying a total of 185,164 anglers.

Subsistence

Information on subsistence fishing in Montauk is either unavailable through secondary data collection or the practice does not exist.

FUTURE

The comprehensive plan for the town of East Hampton recognizes the importance of the commercial and recreational fishing industries here, and includes a commitment to supporting and retaining this traditional industry (Oles 2005). There has been discussion of developing a large wholesale seafood market on Long Island similar to the Fulton Fish Market so that fish caught here could be sold directly on Long Island rather than being shipped to New York City (NY Sea Grant nd).

Nonetheless Erik Braun, the port agent for this part of New York, was not hopeful about the future of the fishing industry. He said there are no new fishermen getting into commercial fishing, and that even those who have done well are not encouraging their children to get into the industry. Much of the fishing infrastructure is disappearing, and those who own docks can make much more by turning them into restaurants. Montauk is the one port still holding on to a commercial fishing industry, however.²⁰

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²⁰ Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

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HAMPTON BAYS/SHINNECOCK, NY¹

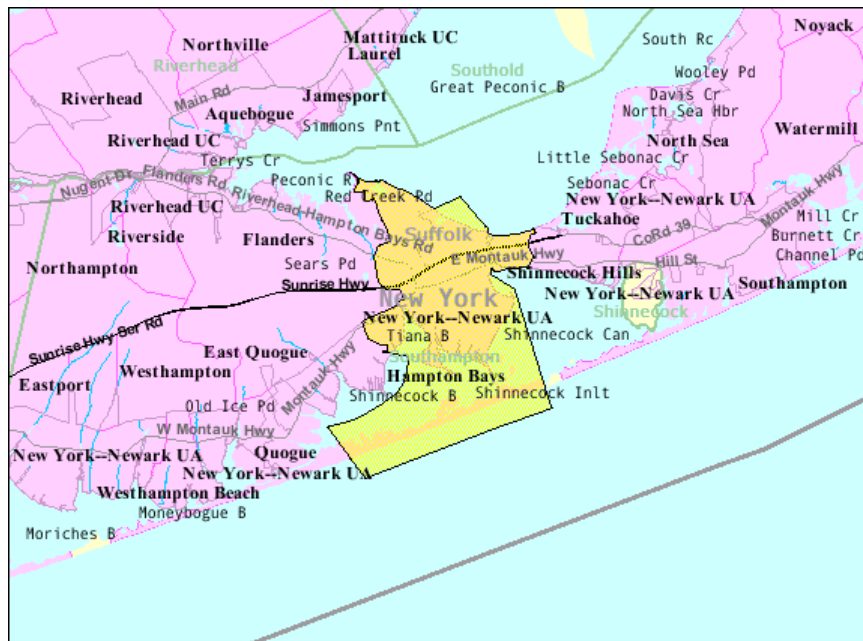
Community Profile²

PEOPLE AND PLACES

Regional orientation

Hampton Bays and Shinnecock here are considered to be the same community. Shinnecock is the name of the fishing port located in Hampton Bays on the barrier island next to Shinnecock Inlet, and does not actually refer to a geopolitical entity. Fishermen use either port name in reporting their catch, but they are considered to be the same physical place.

The hamlet of Hampton Bays is located on the southern coast of Long Island, NY in the town of Southampton. Southampton is a very large township, encompassing 128 square miles. Hampton Bays is on the west side of Shinnecock Bay, a bay protected from the Atlantic by a barrier island and accessed through Shinnecock Inlet. The Shinnecock Canal connects Shinnecock Bay with Great Peconic Bay to the north, allowing vessels to pass between the southern and northern sides of Long Island without having to travel east around Montauk (Town of Southampton nd).



Map 1. Location of Hampton Bays, NY (US Census Bureau 2000)

Historical/Background

The first inhabitants of this area were Native Americans from the Shinnecock tribe, people who still reside in Southampton today on the Shinnecock Reservation. The first

¹ These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

² For purposes of citation please use the following template: “Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov.”

European settlers arrived here in 1640, from Lynn, Massachusetts. Sag Harbor in Southampton was an important whaling port early on, and along with agriculture was the town's primary industry. Starting in the 18th century, residents would dig inlets between Shinnecock Bay and the Atlantic Ocean to allow water in the Bay to circulate, and to increase fish and shellfish productivity in the bay. The Shinnecock Canal, connecting Shinnecock Bay with Peconic Bay, was built in 1892 (Oles 2005). During the 1870s, as the Long Island Railroad running between New York City and Montauk was completed, the communities in Southampton became important tourist destinations where New York City residents built their summer homes, and it retains this distinction today as a vacation destination for New Yorkers. The population of Southampton grows considerably during the summer months, and at its peak is nearly triple the winter population (Town of Southampton nd). Hampton Bays is the most populous of eighteen unincorporated hamlets within Southampton (Oles 2005).

Demographics³

According to Census 2000 data, Hampton Bays had a total population of 12,236, up 55.0% from 7,893 in 1990. Of this total in 2000, 50.4% were female and 49.6% were male. The median age was 38.8 years and 76.3% of the population was 21 years or older while 19.1% were 62 or older.

Hampton Bays' age structure showed the majority of residents to be in the 30-39 and 40-49 year old age categories (see Figure 1). There is a relatively even distribution of men and women in all age categories. A slight dip in the number of 10-19 year olds probably indicates students leaving for college at this time, but there is nothing to demonstrate significant migration either in or out of Hampton Bays.

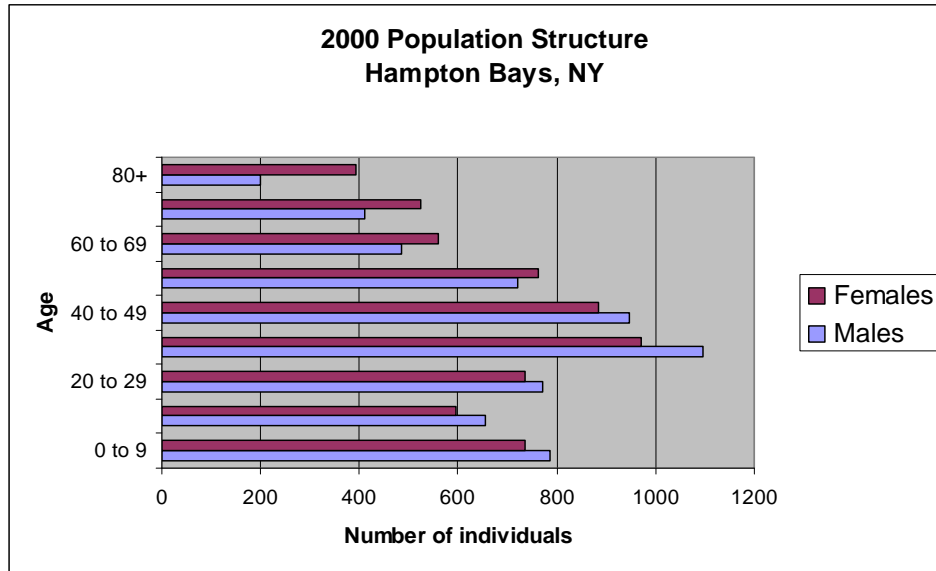


Figure 1. Hampton Bays' population structure by sex in 2000 (US Census Bureau 2000)

The majority of the population of Hampton Bays in 2000 was white (92.8%), with 1.1% of residents Black or African American, 0.4% Native American, 0.9% Asian, and 0.1% Pacific

³ While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

Islander or Hawaiian (Figure 2). A total of 12.5% of the total population identified themselves as Hispanic/Latino (Figure 3). Residents linked their heritage to a number of different ancestries including: Irish (25.7%), Italian (21.6%), German (17.3%), and English (11.6%). With regard to region of birth, 74.7% were born in New York, 10.8% were born in a different state and 13.4% were born outside of the U.S. (including 8.7% who were not United States citizens).

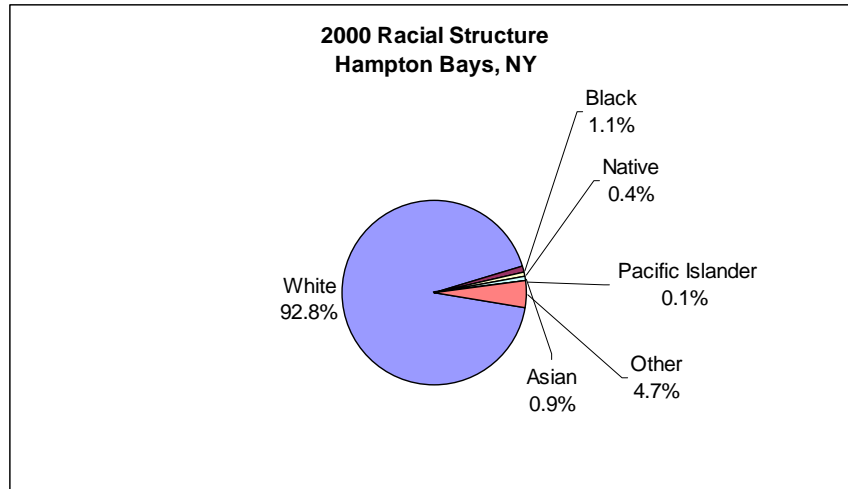


Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

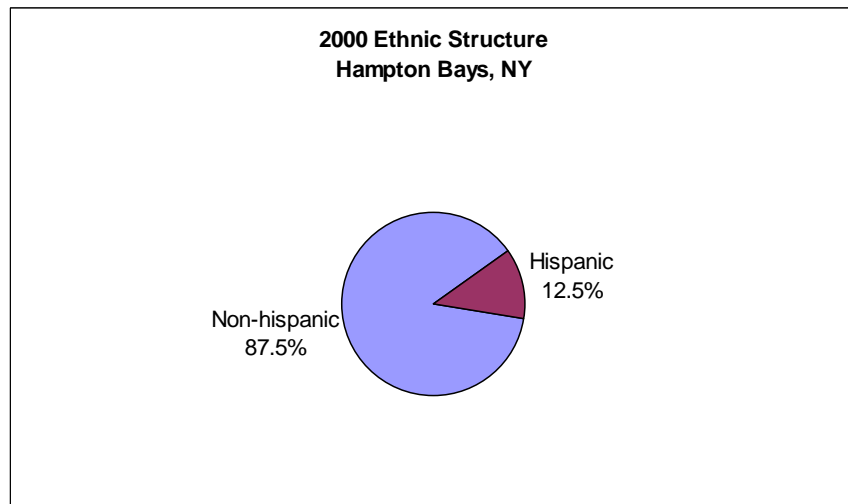


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 82.8% of the population 5 years old and higher in 2000, only English was spoken in the home, leaving 17.2% in homes where a language other than English was spoken, and including 9.2% of the population who spoke English less than 'very well'.

Of the population 25 years and over, 86.6% were high school graduates or higher and 25.9% had a bachelor's degree or higher. Again of the population 25 years and over, 5.3% did not reach ninth grade, 8.0% attended some high school but did not graduate, 33.2% completed high school, 20.8% had some college with no degree, 6.7% received an associate's degree, 16.0% earned a bachelor's degree, and 9.9% received either a graduate or professional degree.

Although religious percentages are not available through the U.S. Census, according to

the Association of Religion Data Archives (ARDA) in 2000 the religion with the highest number of congregations and adherents in Suffolk County was Catholic with 72 congregations and 734,147 adherents. Other prominent congregations in the county were Jewish (48 with 100,000 adherents), United Methodist (47 with 22,448 adherents), Episcopal (40 with 16,234 adherents), Evangelical Lutheran Church (26 with 19,378 adherents), and Muslim (9 with 12,139 adherents). The total number of adherents to any religion was up 3.8% from 1990 (ARDA 2000).

Issues/Processes

The population of the town of Southampton has been growing steadily, and a number of seasonal home owners are choosing to live here year round. This is changing the population structure and dynamics of the town, and is likely to cause house prices to increase in an area where affordability is already a problem. The area around Shinnecock Inlet is one where much growth is expected to occur (Town of Southampton nd). As in many other coastal communities with a fishing industry, the soaring costs of waterfront property make it very difficult for fishermen and others in the industry to afford or retain necessary waterfront property for water access (Town of Southampton nd). Most of the infrastructure at Shinnecock has disappeared in the last few years; where there were at one time three docks for commercial fishermen to pack out at, now only one remains.

Some fishermen are concerned about the accuracy of their assigned historical landings by species for fisheries (often used for promulgating new regulations), as the method used to land fish in New York varies from that in most other states. Called the “box method” it involves fish being boxed at sea, then landed at a consignment dock and from there shipped to Fulton Fish Market in New York City. Prior to the implementation of dealer electronic reporting, NMFS port agents counted the number of boxes landed from each vessel and received a species breakdown from the dock manager (who did not open the boxes but rather based the breakdown on his knowledge of the vessel’s general fishing patterns). This system allowed greater potential for accidental misreporting. Now, the boxes are landed at the consignment dock and immediately shipped to Fulton, where the dealer opens the boxes and reports the landings. Further, individual fishermen report using VTR, logbooks and other methods.

While this method is more accurate in terms of the number and type of fish landed, it can still lead to another type of accidental reporting error. That is, landings are assigned to the incorrect state. This can have inequitable effects on states should an allocation scheme be developed, such as the one for summer flounder, that bases a state’s allocation on the landings of a particular species in that state.

The docks make money by charging \$10-\$12 per box (2007 prices) and by selling fuel. Catch limits and trip limits reduce the number of boxes to be shipped, and have made it very difficult for the docks to stay in business. New York is losing much of its infrastructure, and many of the docks have closed or changed hands in recent years.⁴

In recent years some vessels have been repossessed, which signifies a great change in a fishery where there was always money to be made at one time. The rest of the fleet is aging badly, but fishermen cannot afford new vessels.⁵

As in many other areas of Long Island where clams and other shellfish are a significant part of the fishing industry, water quality is a consistent problem in the increasingly populated shallow bays where the clams are dug (New York Seafood Council n.d.) The bays have had

⁴ Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

⁵ Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

several problems with algal blooms of *Aureococcus anophagefferens*, or brown tide, which killed off bay scallop populations here, and is believed to be related to nutrient depletion in the bay (Oles 2005).

Shinnecock Inlet needs to be dredged consistently because of siltation to allow commercial fishermen and recreational vessels to pass in and out of the inlet into the Atlantic Ocean, which is a costly process (Oles 2005). The Long Island Power Authority is seeking permission to construct a wind farm off Long Island, a proposal which has met with opposition from commercial fishermen in Hampton Bays and elsewhere on the island, because the turbines will block access to a highly productive squid fishery (Anonymous 2005).

Cultural attributes

Sportfishing tournaments are a popular event in this area (Shinnecock Marlin and Tuna Club 2007).

INFRASTRUCTURE

Current Economy

The largest employer in Southampton Town is Southampton Hospital, which employs over 100 people. Other significant sources of employment for residents are in businesses related to tourism or the second home industry, including landscaping, pool maintenance, and construction.⁶

Many employers in the fishing industry have noted the difficulty in attracting employees here when many can make more money in the landscaping business, which has a high demand for laborers, particularly from April through November (Oles 2005). Port Agent Erik Braun said there has been an influx of Hispanic dock workers, and many of the fishermen have had to learn Spanish to communicate with them. This has been a dramatic change within the last 5 years, he said. He also stated that there are no new fishermen starting up, and the children of fishermen, even those that are doing well, are not encouraged to enter into this business.⁷

According to the U.S. Census 2000⁸, 60.6% (6028 individuals) of the total population 16 years of age and over were in the labor force, of which 3.4% were unemployed, 0.3% were in the Armed Forces, and 57.0% were employed (Figure 4).

⁶ Personal communication, Southampton Town Chamber of Commerce, 76 Main St., Southampton, Long Island, NY 11968, 7/13/05

⁷ Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

⁸ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

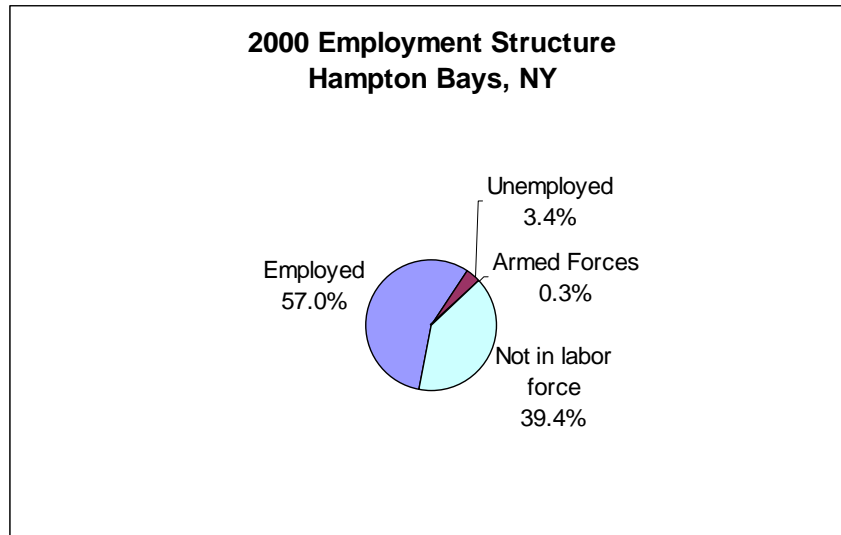


Figure 4. Employment Structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 95 positions or 1.7% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 789 positions or 13.9% of jobs. Educational, health and social services (20.3%), construction (18.9%), and retail trade (14.4%) were the primary industries.

Median household income in Hampton Bays in 2000 was \$50,161 (up 40.0% from \$35,736 in 1990 [US Census Bureau 1990]) and per capita income was \$27,027. For full-time year round workers, men made approximately 56.6% more per year than women.

The average family in Hampton Bays consisted of 3.0 persons. With respect to poverty, 6.7% of families (up from 2.4% in 1990 [US Census Bureau 1990]) and 10.7% of individuals were below the U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 23.2% of families in 2000 earned less than \$35,000 per year.

In 2000, Hampton Bays had a total of 6,881 housing units of which 70.9% were occupied and 86.3% were detached one unit homes. Less than ten percent (7.1%) of these homes were built before 1940. Mobile homes accounted for 1.7% of the total housing units; 93.9% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$178,000. Of vacant housing units, 84.3% were used for seasonal, recreational, or occasional use. Of occupied units 29.8% were renter occupied.

Government

A 5-person Town Board governs the town of Southampton. There is 1 supervisor, elected to a 2-year term, and the rest of the board is elected to staggered 4-year terms (Town of Southampton nd).

Fishery involvement in the government

In addition to the Town Board, the town of Southampton has a Board of Trustees made up of five elected members, which is responsible for governing the laws of the waters and bay bottoms. Their jurisdiction includes boating activities, shellfishing licenses, shoreline protection,

and docks and other marine infrastructure. The laws of the Board of Trustees are enforced by the Bay Constables (Town of Southampton nd).

Institutional

Fishing associations

The New York Seafood Council, located in Hampton Bays, is the largest association representing fishing interests in the state. “The New York Seafood Council (NYSC) is an industry membership organization comprised of individuals, businesses, or organizations involved in the harvesting, processing, wholesale, distribution or sale of seafood products or services to the seafood industry in New York.” (NYSC 2008) The Southampton Town Baymen’s Association serves the interests of the inshore watermen utilizing Shinnecock Bay and the other bays within the town of Southampton. Also relevant to this area is the Long Island Commercial Fishing Association, which promotes commercial fishing throughout Long Island (Oles 2005). The Shinnecock Co-op dock was in operation for 30 years, but went bankrupt and closed two years ago.⁹ There was also an organization called the Concerned Wives of Shinnecock Fishermen, that ceased to exist about 15 years ago.¹⁰

Fishery assistance centers

Information on fishery assistance centers in Hampton Bays was unavailable through secondary data collection.

Other fishing related organizations

The Shinnecock Marlin and Tuna Club is a recreational fishing club that sponsors tournaments. They also represent the interests of sportfishermen at meetings and fight for the improvement of Shinnecock Inlet and the preservation of local waters (Shinnecock Marlin and Tuna Club 2007).

Physical

Hampton Bays is strategically positioned on Shinnecock Bay, protected from the Atlantic by a barrier island and accessed through Shinnecock Inlet. This allows fishermen access to both productive coastal and offshore fishing, and its proximity to markets in New York City is also important (NYSC 2008). It is roughly 30 miles from Montauk, NY on the eastern tip of Long Island, and about 90 miles from New York City (NYSC 2008). The Francis Gabreski Airport in Westhampton Beach is 10 miles away, Long Island Islip MacArthur Airport is 36 miles away, and JFK International Airport is 77 miles from Hampton Bays (MapQuest 2005). The Long Island Railroad stops in Hampton Bays and travels directly into New York City. Roughly 80% of the finfish landed in Hampton Bays/Shinnecock is sold at Fulton’s Fish Market in New York City (NYSC 2008).

The commercial fishing industry for Hampton Bays/Shinnecock is located on a thin strip of sand on the barrier island by Shinnecock Inlet, allowing the vessels to easily pass out of the Inlet into the sea, physically isolated from the rest of the town. Until recently (2005), there were three docks in Shinnecock including the Shinnecock Fish Dock, the fishermen’s cooperative dock, which provided labor, ice, boxes, and trucking for its members, as well as low-cost fuel, and one private dock (Oles 2005). These docks are still present, but only the private dock is still

⁹ Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

¹⁰ Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

operating and packing out fish. The other docks are abandoned; vessels still tie up to them but cannot receive any services. The cooperative dock has been turned into a restaurant.¹¹

The majority of marinas and other infrastructure for recreational fishing as well as recreational boating within the town of Southampton are located in the Hampton Bays area alongside the Shinnecock Canal (Town of Southampton nd). The Shinnecock Canal County Marina is a publicly-owned marina along the canal (Town of Southampton n.d.), but it does not allow commercial vessels to tie up here (Oles 2005). There are at least two bait and tackle shops located in Hampton Bays, and several others within Southampton. There are also six fish retail markets located in Hampton Bays (NYSC 2008).

INVOLVEMENT IN NORTHEAST FISHERIES¹²

Commercial

Both landings data and vessel data have been combined for Hampton Bays/ Shinnecock for this profile because the fishing communities are indistinguishable. Hampton Bays/ Shinnecock is generally considered the second largest fishing port in New York after Montauk. The combined ports of Hampton Bays/Shinnecock had more landings of fish and shellfish in 1994 than at any other commercial fishing port in New York. Combined landings of surf clams and ocean quahogs were worth roughly \$1.6 million in 1994, and squid was at the time the most valuable species here (NYSC 2008). A 1996 report from the New York Seafood Council listed the following vessels for the combined port of Hampton Bays/Shinnecock: 30-35 trawlers, 2-8 clam dredge vessels, 1-2 longline vessels, 1-3 lobster boats, 4-5 gillnetters, as well as 10-15 fulltime baymen and at least 100 part-time baymen (NYSC nd). As of 2005, there was one longline vessel here and many of the trawlers were gone.¹³

Hampton Bays/Shinnecock had at one time a significant surf clam and ocean quahog fishery, evident in the 1997 data, which by 2006 had completely disappeared (Table 1**Error! Reference source not found.**). Oles notes that surf clam and ocean quahog landings in the past had been from transient vessels landing their catch here (Oles 2005). The level of home port fishing declined over the period from 1997 – 2004 for vessels listed with either Hampton Bays or Shinnecock as their home port, but increased slightly in 2005 and 2006 (Table 2Table). Shinnecock/Hampton Bays saw the highest landings in the squid, mackerel, butterfish grouping on average for 1997-2006, at just over \$2.5 million. Landings in 2006 were less than the average value, at just over \$2 million. Landings of smallmesh groundfish, another important species grouping, were considerably lower in 2006 than the ten year average value. However, landings

¹¹ Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

¹² In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

¹³ Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

of the summer flounder, scup, and black sea bass grouping had increased in 2006, and landings of “other” species and scallops were both considerably higher in 2006 than the average values. Generally, the level of landings in Hampton Bays/Shinnecock was much higher than the home port values. Landings declined from a high of close to \$10 million in 1997 down to \$6.5 million in 2002-2004, increasing again to \$8 million in 2005 and 2006. The number of vessels home ported in Hampton Bays/Shinnecock generally declined, from 65 in 1997 to 49 in 2003, increasing again to 54 in 2006.

There are a number of baymen who work in Shinnecock Bay, through permits granted by the town of Southampton, fishing for eels, conch, razor clams, scallops, and oysters, among other species (Oles 2005). The Shinnecock Indians had an aquaculture facility for cultivating oysters in the bay, but the oyster beds were largely destroyed through pollution and nutrient-loading; they are once again starting to recreate the oyster beds (DCR 2004).

Landings by Species

Table 1. Dollar value by Federally Managed Groups of landings for Hampton Bays/Shinnecock

HAMPTON BAYS / SHINNECOCK	Average from 1997-2006	2006 only
Squid, Mackerel, Butterfish	2,524,001	2,039,202
Summer Flounder, Scup, Black Sea Bass	1,228,520	1,322,108
Smallmesh Groundfish¹⁴	1,061,915	289,561
Other¹⁵	934,568	1,525,033
Monkfish	640,566	651,960
Scallop	478,525	1,227,794
Largemesh Groundfish¹⁶	473,771	271,480
Tilefish	468,683	377,301
Bluefish	216,681	241,080
Skate	71,269	59,764
Surf Clams, Ocean Quahog	56,708	0
Dogfish	48,407	498
Lobster	25,638	17,937
Herring	393	1,738

¹⁴ Smallmesh Multi-Species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

¹⁵ “Other” species includes any species not accounted for in a federally managed group

¹⁶ Largemesh Groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

Vessels by Year¹⁷

Table 2. All columns represent vessel permits or landings value combined between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port (\$)	Level of fishing landed port (\$)
1997	65	38	8,195,598	9,754,671
1998	60	30	8,040,050	9,671,692
1999	58	32	9,172,792	8,445,374
2000	58	31	8,361,761	9,472,731
2001	57	36	7,598,408	9,221,483
2002	51	35	6,996,831	6,528,459
2003	49	33	5,291,436	6,528,459
2004	51	32	4,412,092	6,590,465
2005	50	37	4,866,267	8,057,658
2006	54	42	4,930,913	8,025,456

Vessels home ported = No. of permitted vessels with location as homeport

Vessels (owner's city) = No. of permitted vessels with location as owner residence¹⁸

Level of fishing home port (\$) = Landed value of fisheries associated with home ported vessels

Level of fishing landed port (\$) = Landed value of fisheries landed in location

Recreational

Recreational fishing is an important part of the tourist industry in Hampton Bays. The marinas here are well positioned for both inshore fishing in Shinnecock Bay and offshore fishing, and there are numerous charter and party boats that go fishing in both areas (Association of Marine Industries 1998). Many of those who own second homes in Southampton also own private boats for recreational fishing, and this contributed substantially to the marinas and other marine industries (Oles 2005). A website dedicated to fishing striped bass ([Stripers 247.com](http://Stripers247.com)) lists a number of locations in Hampton Bays for catching striped bass from on shore. One report estimated the value of recreational fishing at between \$32 million and \$66.8 million for the town of Southampton, which far exceeds the value of commercial fishing here. Recreational shellfishing is a popular activity in the area; at one time it was estimated that 50 percent of shellfishing in Southampton was done recreationally, both by residents and tourists (Town of Southampton nd).

Subsistence

Oles noted in his report on the Hampton Bays/Shinnecock community (2005) that the recreational fishery has shifted from one focused on bagging as many fish as possible for consumption to one focused on catch-and-release, as many of those fishing in the area can easily afford to buy fish.

¹⁷ Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

¹⁸ The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

FUTURE

The master plan for the Town of Southampton includes a commitment to preserving the town's fisheries by protecting the industry from growth and development pressures, recognizing the importance of fisheries to both the economy and character of the area (Town of Southampton nd). The Master Plan, adopted in 1999, includes a plan to expand the town's commercial fishing dock (Town of Southampton nd).

"The resilience of the commercial fishing industry in Hampton Bays is threatened by the cumulative effects of fisheries management and the forces of gentrification that are sweeping the area" (Oles 2005). One potentially positive note for the fishing industry is that the barrier island and beach where the commercial fishing industry is located are owned by Suffolk County and cannot be developed, so there is less direct competition for space here (Oles 2005).

Erik Braun, the port agent for this part of New York, was not hopeful about the future of the fishing industry. He said there are no new fishermen getting into commercial fishing, and that even those who have done well are not encouraging their children to get into the industry. The fleet is badly aging and much of it is in disrepair. Much of the infrastructure here is also gone, and those who own docks can make much more by turning them into restaurants.¹⁹

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¹⁹ Personal Communication, Erik Braun, NMFS port agent, E. Hampton, NY, July 22, 2005

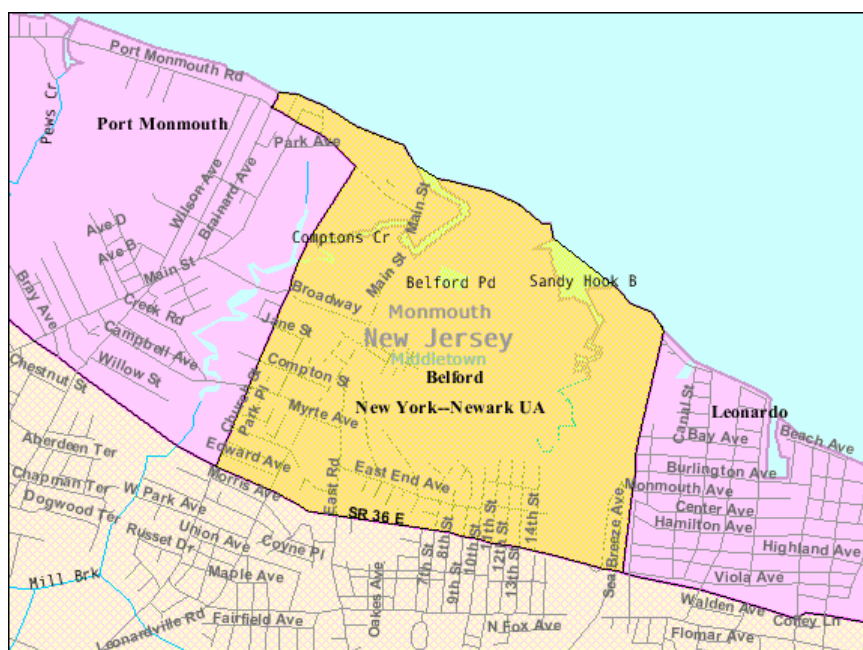
BELFORD (MIDDLETOWN), NJ¹

Community Profile²

PEOPLE AND PLACES

Regional orientation

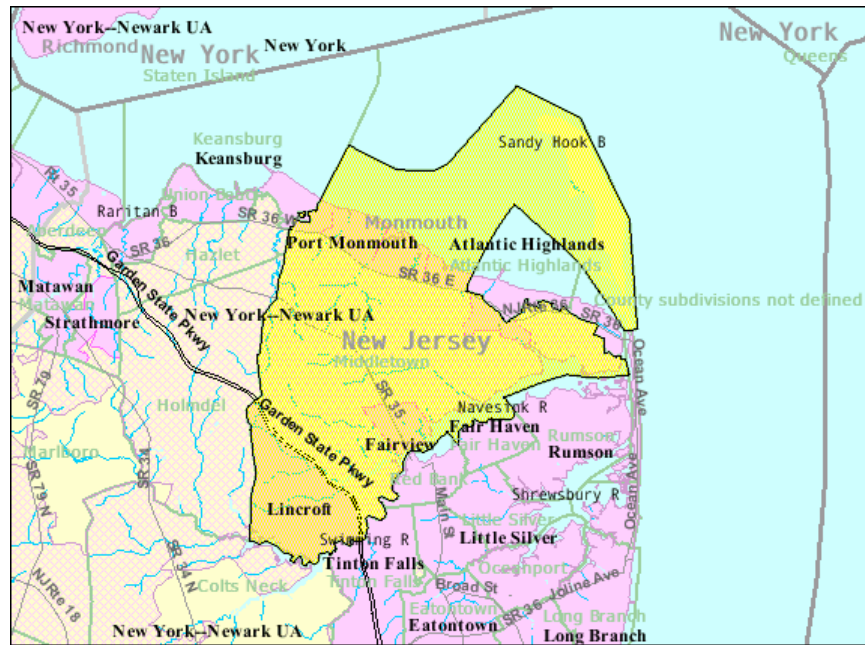
The community of Belford, New Jersey (40.42° N, 74.09°W) is located on the Bayshore in the township of Middletown, in Monmouth County. Middletown is bordered by Raritan Bay/Sandy Hook Bay in the north and the Navesink River to the southeast (McCay et al. 2005). Belford lies along Sandy Hook Bay (part of the Raritan Bay complex), and occupies 1.3 square miles of land (USGS 2008; see Maps 1 and 2) While most fishing activity takes place in Belford, some of the surrounding communities within Middletown also play a role in the fishery.



Map 1. Census reference map of the location of Belford, NJ (US Census Bureau 2000)

¹ These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

² For purposes of citation please use the following template: “Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov.”



Map 2. Census reference map of the location of Middletown, NJ

Historical/Background information

Fishing has been a long tradition in this area; the Lenni Lenape Indians fished in the bay here before white settlers arrived and the Dutch were fishing here in the 1600s (Jones 2004). Belford is part of the township of Middletown, which was first established as a township in 1664 (McCay et al. 2005). Middletown has 14 distinct villages, of which four, North Middletown, Port Monmouth, Belford, and Leonardo, lie along the Bayshore (McCay et al. 2005). The area known today as Belford, along with what is now Port Monmouth, was originally known as Shoal Harbor. Shoal Harbor was relatively isolated until the mid-1800s when the construction of a road here as well as a nearby railroad opened this area up allowing farmers and fishermen to sell their wares in New York City and other areas (Jones 2004). Belford was officially established in 1891 when a rail station was built here, separating from Port Monmouth (Township of Middletown nd). A menhaden processing plant was built in Belford in the late 1800s, which operated until 1982 (Jones 2004); this was once the town's largest employer (Township of Middletown nd). The presence and stench of the menhaden plant helped maintain Belford as a relatively unchanged fishing port while the rest of the shore around it was subject to intense development and tourism. Belford has notoriously been home to pirates, blockaders, rum runners, and even through the 1980s, fish poachers. There is a long tradition among some Belford fishermen of not obeying fisheries regulations (Jones 2004). Some consider Belford to be the longest continuously operating fishing village on the East Coast.

Demographics³

Belford CDP

According to Census 2000 data, Belford had a total population of 1,340⁴; 1990 population data was unavailable for Belford for comparison. Of this total in 2000, 50.4% were female and 49.6% were male. The median age was 35.8 years and 69.6% of the population was 21 years or older while 11.8% were 62 or older.

The population structure for Belford indicates that this is a community of young families. The largest percentages of residents were between 30-39 and 40-49 years of age (Figure 1). There were also a large number of children between the ages of 0-9, and a significant decline in the number of residents over the age of 60. Like many fishing communities, Belford's population showed a dip in the number of residents between the ages of 20-29 and even in the 10-19 age bracket, as young people left to go to school or in search of jobs. This is more prevalent for males than for females for the 20-29 age bracket.

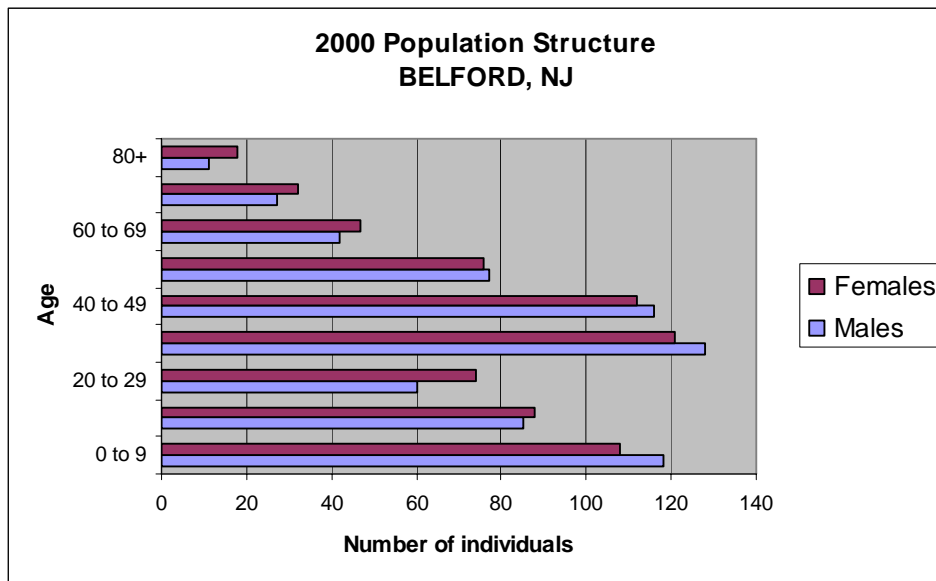


Figure 1. Population structure by sex in 2000 (US Census Bureau 2000)

The majority of the population of Belford in 2000 was white (97.2%), with 0.3% of residents black or African American, 0.4% Native American, 0.7% Asian, and 0.1% of residents listed as Pacific Islander or Hawaiian (Figure 2). Only 4.7% of the total population identified themselves as Hispanic/Latino (Figure 3). Residents linked their heritage to a number of different ancestries including: Irish (44.0%), Italian (38.2%) German (23.6%), and Polish (8.6%). With regard to region of birth, 63.2% were born in New Jersey, 32.3% were born in a different state and 2.7% were born outside of the U.S. (including 0.4% who were not United States citizens).

³ While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

⁴ These and all census data, unless otherwise referenced, can be found at <http://factfinder.census.gov/home/saff/main.html>; census data used are for Belford CDP

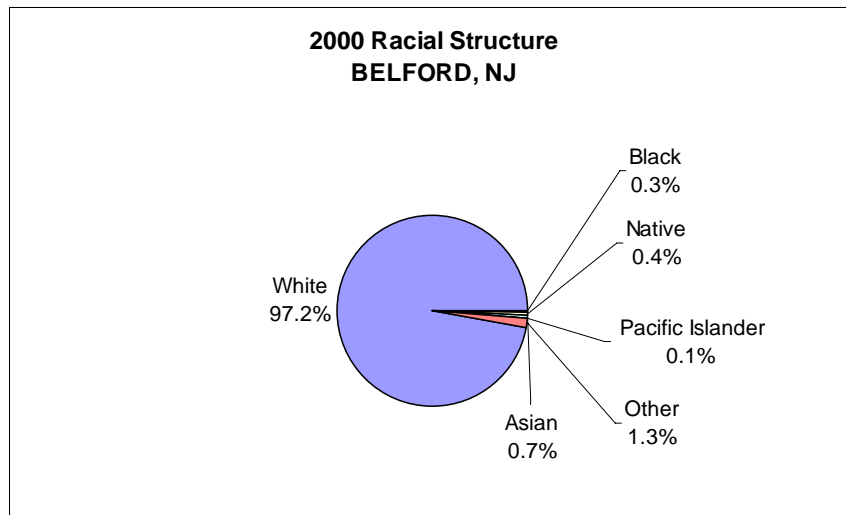


Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

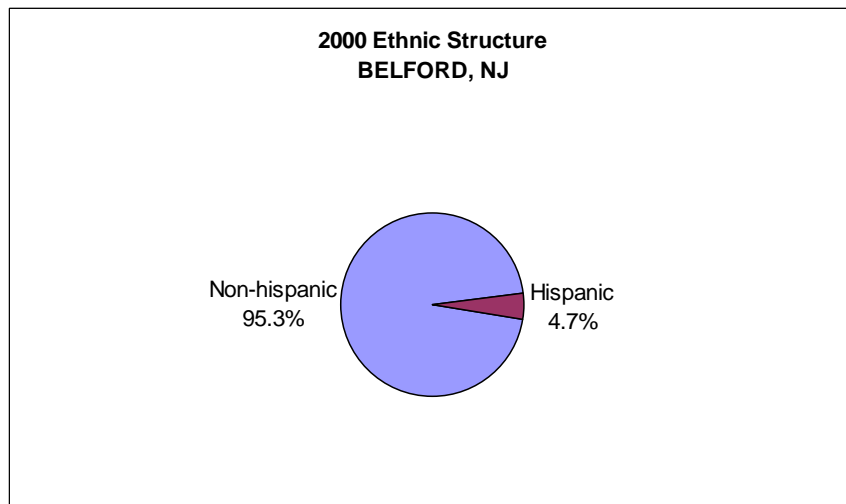


Figure 3. Ethnic Structure in 2000 (US Census Bureau)

For 90.0% of the population 5 years old and higher in 2000, only English was spoken in the home, leaving 10.0% in homes where a language other than English was spoken, and including 3.0% of the population who spoke English less than “very well.”

Of the population 25 years and over, 89.7% were high school graduates or higher and 16.8% had a bachelor’s degree or higher. Again of the population 25 years and over, 1.0% did not reach ninth grade, 9.3% attended some high school but did not graduate, 41.6% completed high school, 24.3% had some college with no degree, 7.0% received their associate’s degree, 13.3% earned their bachelor’s degree, and 3.4% received either a graduate or professional degree.

Middletown

According to Census 2000 data, Middletown township had a total population of 66,327, down 2.7% from 1990. Of this total in 2000, 51.4% were female and 48.6% were male. The median age was 38.8 years and 70.8% of the population was 21 years or older while 15.0% were 62 or older.

The population structure for Middletown indicates that this is a community of young families. The largest percentages of residents are between 40-49 years and 30-39 years of age. There are also a large number of children between the ages of 0-19, and a significant decline in the number of residents over the age of 60 (Figure 4). Like many communities, Middletown’s population has a dip in the number of residents between the ages of 20-29, as young people leave to go to school or in search of jobs.

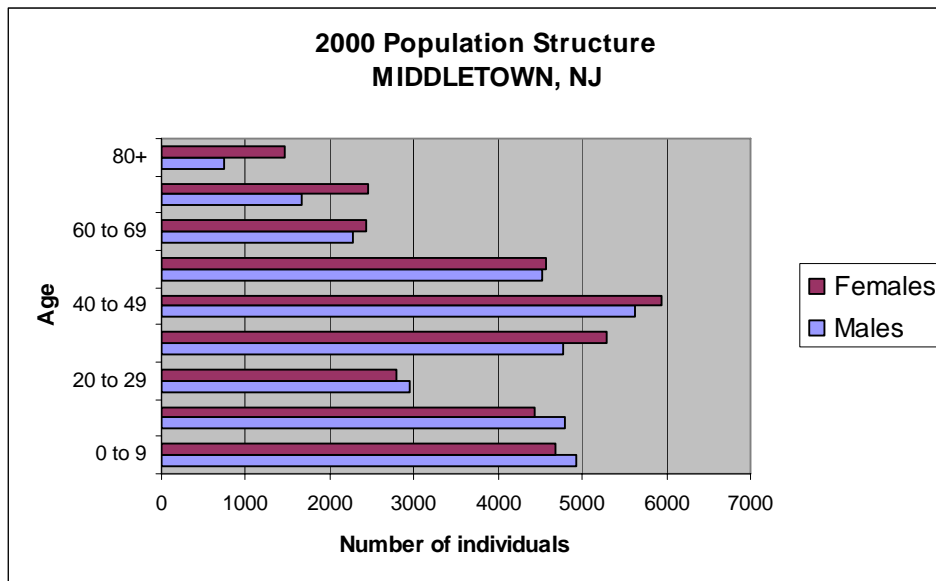


Figure 4. Population structure by sex in 2000 (US Census Bureau 2000)

The majority of the population of Middletown in 2000 was white (94.6%), with 1.4% of residents Black or African American, 0.2% Native American, 2.9% Asian, and 0.1% of residents listed as Pacific Islander or Hawaiian (see Figure 5). Only 3.4% of the total population identified themselves as Hispanic/Latino (see Figure 6). Residents linked their heritage to a number of different ancestries including: Irish (32.9%), Italian (28.9%), German (17.4%), English (8.8%), and Polish (8.7%). With regard to region of birth, 58.7% were born in New Jersey, 34.1% were born in a different state and 6.4% were born outside of the U.S. (including 2.5% who were not United States citizens).

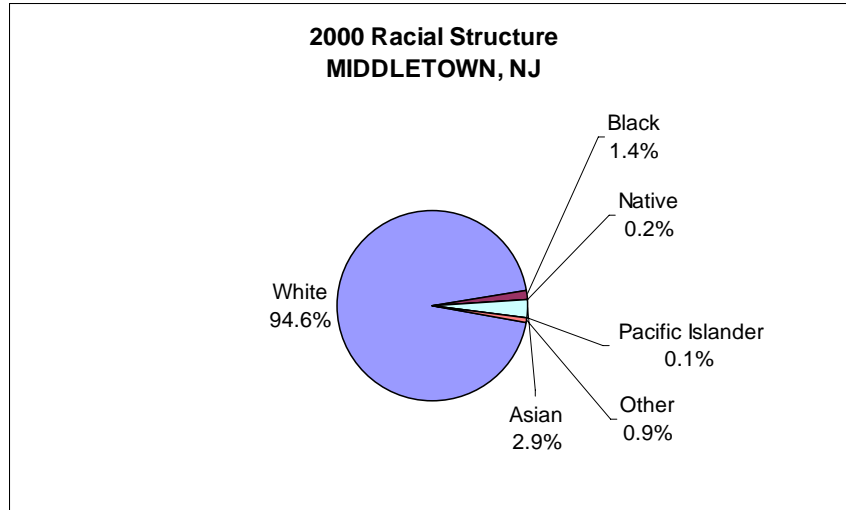


Figure 5. Racial Structure in 2000 (US Census Bureau 2000)

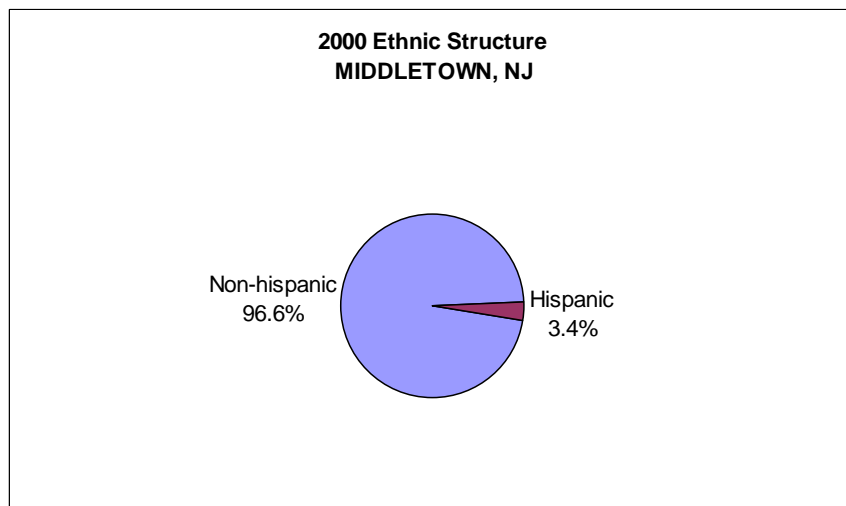


Figure 6. Ethnic Structure in 2000 (US Census Bureau 2000)

For 91.1% of the population 5 years old and higher in 2000, only English was spoken in the home, leaving 8.9% in homes where a language other than English was spoken, and including 2.3% of the population who spoke English less than “very well.”

Of the population 25 years and over, 90.7% were high school graduates or higher and 35.0% had a bachelor’s degree or higher. Again of the population 25 years and over, 2.7% did not reach ninth grade, 6.5% attended some high school but did not graduate, 29.2% completed high school, 19.7% had some college with no degree, 6.9% received their associate’s degree, 22.4% earned their bachelor’s degree, and 12.6% received either a graduate or professional degree.

Although religious percentages are not available through the U.S. Census, according to the American Religion Data Archive (ARDA) in 2000 the religion with the highest number of congregations and adherents in Monmouth County was Catholic with 50 congregations and 289,183 adherents. Other prominent congregations in the county were Jewish (42 with 65,000 adherents), United Methodist (47 with 12,992 adherents), and Muslim (5 with 9,455 adherents). The total number of adherents to any religion increased 38.9% from 1990 to 2000 (ARDA 2000).

Issues/Processes

The promised clam depuration plant and renovation of the cooperative and other fishing infrastructure in Belford, which may be of great benefit to the fishing community here, have been continuously postponed, and fishermen are concerned that condominiums will be built on the property instead. The project was being headed by the Bayshore Economic Development Corporation, which later became surrounded with controversy and had some of its state funding cut off.

As Belford becomes more accessible to commuters to New York City and elsewhere, and as housing is increasingly scarce around the city, many people are moving to Belford and forcing up the price of homes. The resulting increase in property taxes may force some residents who have lived in Belford their entire lives to relocate (Jones 2004). Belford represents some of the last untouched waterfront real estate in New Jersey within commuting distance to New Jersey, and development pressures here are increasing (NJEDA nd).

There is frequently conflict between menhaden purse seine vessels from Belford and recreational fishermen, who criticize the vessels for catching large amounts of oysters and sport fish species along with the menhaden. For this and other reasons, there is frequently animosity between recreational and commercial fishermen (Jones 2004).

Cultural attributes

The site of the Belford Fisherman's Co-op has an interpretive exhibit about the commercial fishing industry here (NPS nd). Monmouth County wishes to promote the co-op as a regional tourist attraction (van Develde 2003). The Leonardo Party and Pleasure Boatman's Association hosts fishing tournaments out of the Leonardo State Marina.

INFRASTRUCTURE

Current Economy

The largest employers in the township of Middletown are the following: AT&T (3,300+ employees; McCay et al. 2005), Food Circus Supermarkets, Inc. (1,263 employees), Brookdale Community College (737 employees), and T&M Associates (engineering - 200 employees). There are many other large employers throughout Monmouth County where Middletown residents are likely to be employed (Monmouth County nd). Additionally, many of Middletown's residents commute to work in New York City (McCay et al. 2005).

Belford CDP

According to the U.S. Census 2000⁵, 76.4% (799 individuals) of the total population 16 years of age and over were in the labor force, of which 2.2% were unemployed, 1.1% were in the Armed Forces, and 71.3% were employed (see Figure 7).

⁵ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

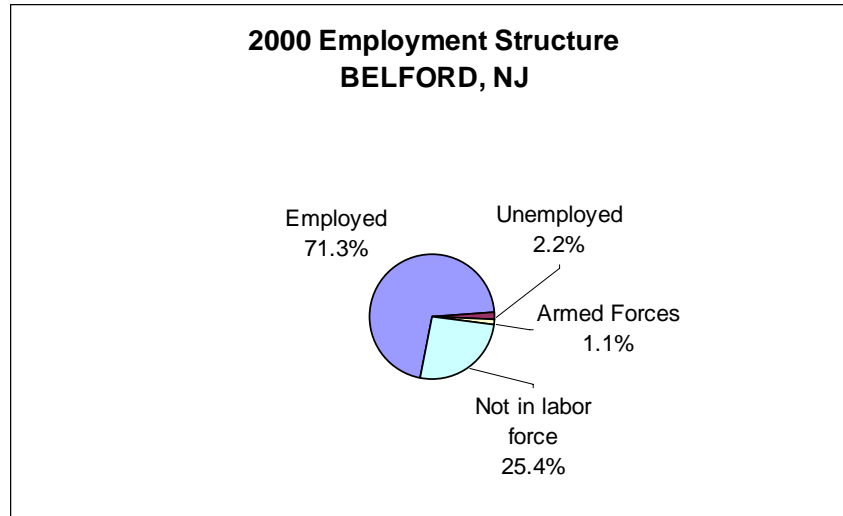


Figure 7. Employment Structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, in Belford jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 17 positions or 2.3% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 46 positions or 6.2% of jobs. Construction (17.5%), educational, health, and social services (16.5%), professional, scientific, management, administrative, and waste management services (12.8%), and manufacturing (8.9%) were the primary industries.

Median household income in Belford in 2000 was \$66,964 (1990 population data was unavailable for Belford) and per capita income was \$25,412. For full-time year round workers, men made approximately 47.9% more per year than women.

The average family in Belford consisted of 3.29 persons. With respect to poverty, 1.3% of families (1990 population data was unavailable for Belford) and 3.2% of individuals were below the U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 14.4% of all families of any size earned less than \$35,000 per year.

In 2000, Belford had a total of 548 housing units, of which 95.2% were occupied and 94.2% were detached one unit homes. More than one-third (35.9%) of these homes were built before 1940. No mobile homes, boats, RVs, vans, etc. were found for Belford; 96.4% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$146,000. Of vacant housing units, 4.5% were used for seasonal, recreational, or occasional use, while of occupied units 13.5% were renter occupied.

Middletown

According to the U.S. Census 2000⁶, 66.4% (33,789 individuals) of the total population 16 years of age and over were in the labor force, of which 2.2% were unemployed, 0.1% were in the Armed Forces, and 64.1% were employed (see Figure 8).

⁶ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

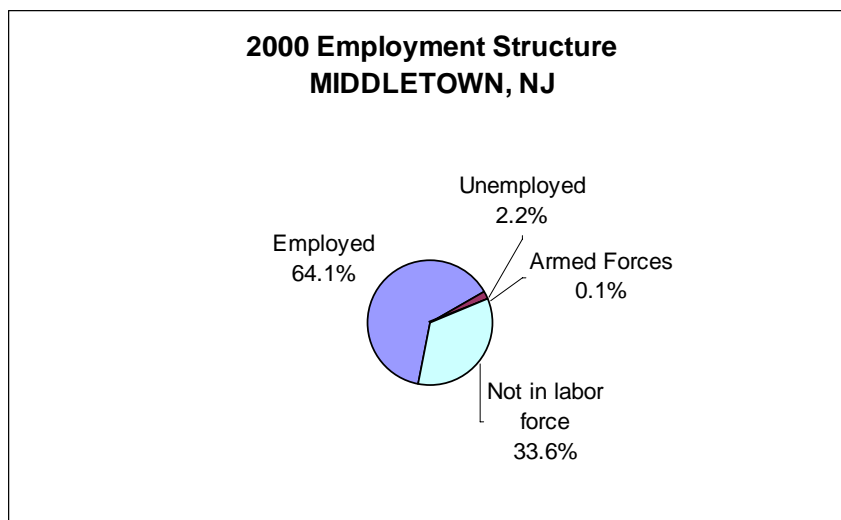


Figure 8. Employment Structure in 2000

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 95 positions or 0.3% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 1,587 positions or 4.9 % of jobs. Educational, health, and social services (18.6%), finance, insurance, real estate, and rental and leasing (13.4%), professional, scientific, management, administrative, and waste management services (12.6%), and retail (12.0%) were the primary industries.

Median household income in Middletown in 2000 was \$75,566 (up 38.6% from \$54,503 in 1990 [US Census Bureau 1990]) and per capita income was \$34,196. For full-time year round workers, men made approximately 67.7% more per year than women.

The average family in Middletown consisted of 3.27 persons. With respect to poverty, 1.9% of families (similar to 1.8% in 1990 [US Census Bureau 1990]) and 3.1% of individuals were below the U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 11.3% of all families of any size earned less than \$35,000 per year.

In 2000, Middletown had a total of 23,841 housing units of which 97.5% were occupied and 80.6% were detached one unit homes. Just over ten percent (12.1%) of these homes were built before 1940. Mobile homes, boats, RVs, vans, etc. accounted for 0.1% of housing; 80.0% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$210,700. Of vacant housing units, 12.3% were used for seasonal, recreational, or occasional use, while of occupied units 13.6% were renter occupied.

Governmental

Middletown is governed by a five-member township committee, which includes the mayor, who is designated for one year by the other members. Each committee member serves a three-year term. Belford is one of about a dozen villages within the township of Middletown (Township of Middletown nd).

Fisheries involvement in government

In 2006 the Town of Middletown was awarded a \$75,000 Smart Future planning grant from the state to study ways to improve the economic vitality of the fishing industry in Belford (Anon 2006).

Institutional

Fishing associations

“Belford is believed to have the oldest continually operating fishing cooperative on the east coast. It was founded in 1953... The Belford Seafood Cooperative handles members’ catches, purchases fish from non-members, arranges for the sale and transportation of the fish, and leases a lot of the docks to the fishermen” (Jones 2004).

[Garden State Seafood Association](#) in Trenton is a statewide organization of commercial fishermen and fishing companies, related businesses and individuals working in common cause to promote the interests of the commercial fishing industry and seafood consumers in New Jersey.

The [Jersey Coast Anglers Association](#) (JCAA) is an association of over 75 saltwater fishing clubs throughout the state. Founded in 1981, the purpose of the organization is to unite and represent marine sport anglers to work towards common goals. The JCAA website (www.jcaa.org) also provides links for many NJ anglers associations.

Fishery assistance centers

Information on fishery assistance centers in Middletown/Belford was unavailable through secondary data collection.

Other fishing related organizations

The Leonardo Party and Pleasure Boatman’s Association hosts fishing tournaments. The [NY/NJ Baykeeper](#) is working to protect and preserve the Hudson/Raritan Estuary for the benefit of both natural and human communities. The organization worked unsuccessfully in conjunction with the Belford fishermen in an attempt to prevent the construction of the New York City ferry dock in Belford.

Physical

Belford is located within the shelter of Sandy Hook (NJFishing nd). The Belford Seafood Cooperative “includes the Pirate’s Cove Restaurant and retail fish establishments, as well as a net house, the dock, and the boats. There is also a wholesale and retail lobster facility nearby called Shoal Harbor Lobster. The co-op is on Compton’s Creek, which runs directly into Raritan Bay. A relatively new wastewater facility and a brand-new ferry terminal share the creek with the fishermen.” When the New York City ferry was put into place in Compton Creek, the creek was widened and more bulkheads were put in, providing more docking space for fishing vessels (Jones 2004). The town of Middletown has at least three marinas and a boat ramp. Bayshore Waterfront Park, in Port Monmouth, has a large fishing pier and is home to the Monmouth Cove Marina (McCay et al. 2005). The Leonardo State Marina, located in the village of Leonardo, has 179 berths, a bait and tackle shop, fuel, and a boat ramp. There are both charter and party boats found here (NJDEP nd). There are bait and tackle and other marine-related businesses located along Route 36 in Belford (McCay et al. 2005).

The township of Middletown has a NJ Transit rail station and several NJ transit bus stops. Route 36 runs through Belford, and the Garden State Parkway and Route 35 run through Middletown (McCay et al. 2005). Belford is about 30 miles from Point Pleasant, 35 miles from Newark, and about 44 miles from New York City. The nearest airport is Newark Liberty International Airport. In 2002 [ferry service between Belford and Pier 11](#) in Manhattan began operation. There are 500 parking spaces available at the Belford Ferry terminal. The commute takes about 40 minutes.

INVOLVEMENT IN NORTHEAST FISHERIES⁷

Commercial

Belford is listed as one of the six major commercial fishing ports in the state of New Jersey (NJDA nd). Belford has a tradition of fishing for menhaden that dates back to the 1800s, when a processing plant was constructed here. Although the plant is no longer in existence, today menhaden are still pursued from Belford with trawlers fitted with purse seines (Jones 2004). Menhaden have experienced a resurgence recently (2006), primarily for use as bait (NJ Fishing nd). The commercial fishing activity is based out of Compton Creek. Commercial catches all go through the Belford Seafood Cooperative, which sells most of its product to Fulton Fish Market and to other markets along the East Coast. There are about 20-30 vessels associated with the Co-op, including about 14-15 draggers, about 12 lobster boats, and a number of crabbing boats. There are about 40 vessels in total located in Belford. Much of the fishing here is done less than a mile from shore; this is primarily a baymen's port. Shoal Harbor Lobster, also located in Belford, is an independent wholesaler; the lobsters sold here come from many different places (Jones 2004). They provide all lobsters sold in A&P Supermarkets in New Jersey and Long Island (Peet 2001). Shoal Harbor sells some lobsters from local vessels; they used to have their own boats but they sold them. There are 4 employees at this business.⁸

While some landings and vessel data are listed for Middletown, the majority are listed for Belford, and they have been combined in this profile. The number of vessels listed for Belford is relatively consistent, with a high of 39 in 2004 (see Table 2). The number of home ported vessels was higher in all years than the number of vessels with owners living in Belford/Middletown, indicating that some vessel owners live in other communities. On average for 1997-2006, the most valuable species grouping in Belford was summer flounder, scup, and black sea bass, followed by the "other" species grouping (see Table 1). For both the 2006 landings values were higher than the 1997-2006 average landings. Most years saw few if any landings listed for Middletown.

⁷ In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

⁸ Shoal Harbor Lobster Company, personal communication, June 28, 2006

Landings by Species

Table 1. Rank Value of Landings for Federally Managed Groups

BELFORD/MIDDLETOWN	Rank Value of Average Landings from 1997-2006
Summer Flounder, Scup, Black Sea Bass	1
Other⁹	2
Lobster	3
Largemesh Groundfish¹⁰	4
Squid, Mackerel, Butterfish	5
Smallmesh Groundfish¹¹	6
Surf Clams, Ocean Quahog	7
Bluefish	8
Monkfish	9
Dogfish	10
Skate	11
Scallop	12
Herring	13
Tilefish	14

(Note: Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.)

Vessels by Year¹²

Table 1. Federal Vessel Permits Between 1997-2006

Year	# Vessels (home ported)	# Vessels(owner's city)
1997	36	20
1998	31	20
1999	31	19
2000	36	21
2001	36	21
2002	35	21
2003	37	28
2004	39	30
2005	36	27
2006	34	26

(Note: # Vessels home ported = No. of permitted vessels with location as homeport
Vessels (owner's city) = No. of permitted vessels with location as owner residence¹³)

⁹ "Other" species includes any species not accounted for in a federally managed group

¹⁰ Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

¹¹ Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

¹² Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

¹³ The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

Recreational

Recreational fishing is important to the Bayshore region; there are a number of bait and tackle shops and marinas located here. However, there is little recreational fishing in Belford itself (Jones 2004). Port Monmouth has a fishing pier and marina at Bayshore Waterfront Park (McCay et al. 2005). Leonardo State Marina has a bait and tackle shop as well as both charter and party boats which dock here (NJDEP nd). The Leonardo Party and Pleasure Boatman's Association hosts fishing tournaments out of the Leonardo State Marina.

In New Jersey the charter/party fleet is the largest on east coast. Many vessels are over 120 ft long and carry over 150 people.¹⁴

Subsistence

Information about subsistence fishing in Belford/Middletown was either unavailable through secondary data collection or the practice does not exist.

FUTURE

The Middletown Master Plan recognizes the importance of Belford as a fishing community and expresses a determination to maintain this character. There is a proposed fishing center for Belford called the Bayshore Technology Center, which would include a research and development facility, a fish farming center, and a clam depuration plant. The goals of the technology center would be to create jobs, promote growth in the Bayshore's commercial fishing industry, and secure the future of the cooperative (Jones 2004). The Bayshore Development Corporation has been working with the Port Authority of New York and New Jersey among others to encourage economic development in the Belford harbor area (McCay et al. 2005). There are also plans in the works to refurbish the cooperative itself (van Develde 2004). These plans have recently been stalled, but the town has just received a grant from the state to begin working on this project itself (Anon 2006). The township and county have been making major infrastructure improvements in and around Belford to roads, bridges, etc. in an effort to revitalize the community and to draw people from elsewhere (Jones 2004).

The community of Belford, despite its proximity to many large urban centers, had been relatively isolated and underdeveloped. However, recently ferry service began between Belford and New York City, and a large upscale condominium development was built, bringing an influx of people to the community. Fishermen anticipate the community will change a great deal. The town has expressed a desire to maintain fishing here, but commercial fishermen perceive this as referring to only recreational fishing activity. There is concern that the new residents won't like the sight and smell of the fisherman's co-op, and the resulting conflict will harm the fishing industry. Many fishermen believe the proposed construction of a clam depuration plant could boost the industry; currently all clams taken from the bay need to be purified to rid them of pollution, and the depuration plants in nearby communities don't have the capacity to take many clams from Belford (Jones 2004).

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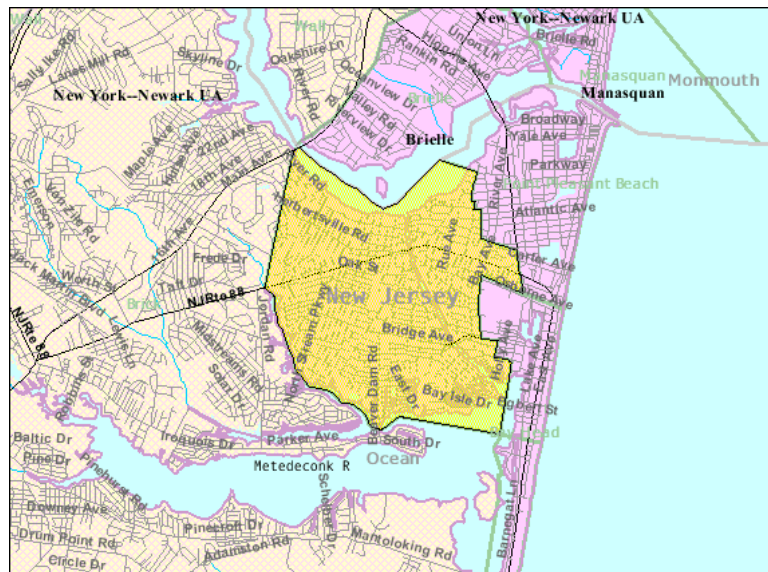
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POINT PLEASANT and POINT PLEASANT BEACH, NJ¹ Community Profile²

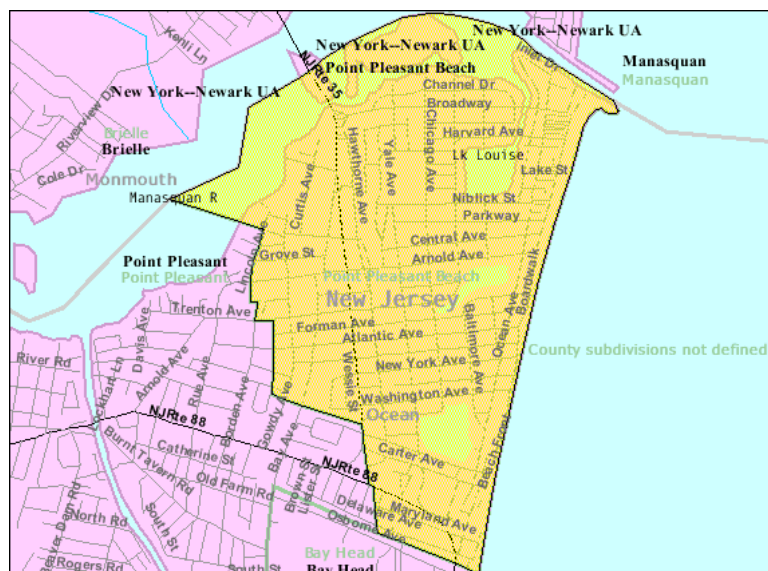
PEOPLE AND PLACES

Regional orientation

The community of Point Pleasant (40.08°N, 74.07°W) is located in Ocean County in the state of New Jersey. Point Pleasant encompasses the adjacent boroughs of Point Pleasant and Point Pleasant Beach and is situated 16 miles from Toms River. Due to the close relation between Point Pleasant and Point Pleasant Beach with regard to the commercial and recreational fishing industries, they are being considered here as a single community.



Map 1. Location of Point Pleasant, NJ (US Census Bureau 2000a)



Map 2. Location of Point Pleasant Beach, NJ (US Census Bureau 2000a)

¹ These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

² For purposes of citation please use the following template: "Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov."

Historical/Background

The first community in the Point Pleasant area was called Lovelandtown, and was made up of settlers who fished, clammed, hunted, and otherwise subsisted from the bay environment. The first of the Lovelands probably arrived in the 1810s, and were proficient in boat building, fishing, decoy carving, guiding and gunning (NJDA nd). Over the years, Point Pleasant has transitioned from an existence as a summer resort town to becoming a family and community of about 19,000 year-round residents (Borough of Point Pleasant nd). Point Pleasant Beach, NJ, located 1.5 miles from Point Pleasant, is known as a destination for recreational fishermen. Some of the most popular areas to fish are: the Manasquan Inlet Wall, which produces fish year round as it connects the Atlantic to the Manasquan River; the Manasquan River itself; and the “Canal” connecting the Manasquan River to the upper Barnegat Bay (NJMetroNET Inc nd). Point Pleasant supports a large recreational fishing fleet (Monmouth County nd), and a small commercial fleet targeting fluke, squid, silver and red hake, and scallops (mostly in local waters) and surfclams. Though the surfclam fishery was pioneered here and surf clams continue to be landed, there are no longer any processing plants in Point Pleasant (NJ Fishing nd).

Demographics³

Point Pleasant - According to Census 2000 data⁴, Point Pleasant had a total population of 19,306, up 6.2% from the reported population of 18,177 in 1990. Of this 2000 total, 49.1% were male and 50.9% were female. The median age was 39.4 years and 73.5% of the population was 21 years or older while 17.2% was 62 or older.

Point Pleasant’s age structure (Figure 1) showed a preponderance of the 30 to 49 years age groups. The age group of 20-29 year old residents was smaller compared to the other age groups, showing that apparently young people are leaving the community after high school.

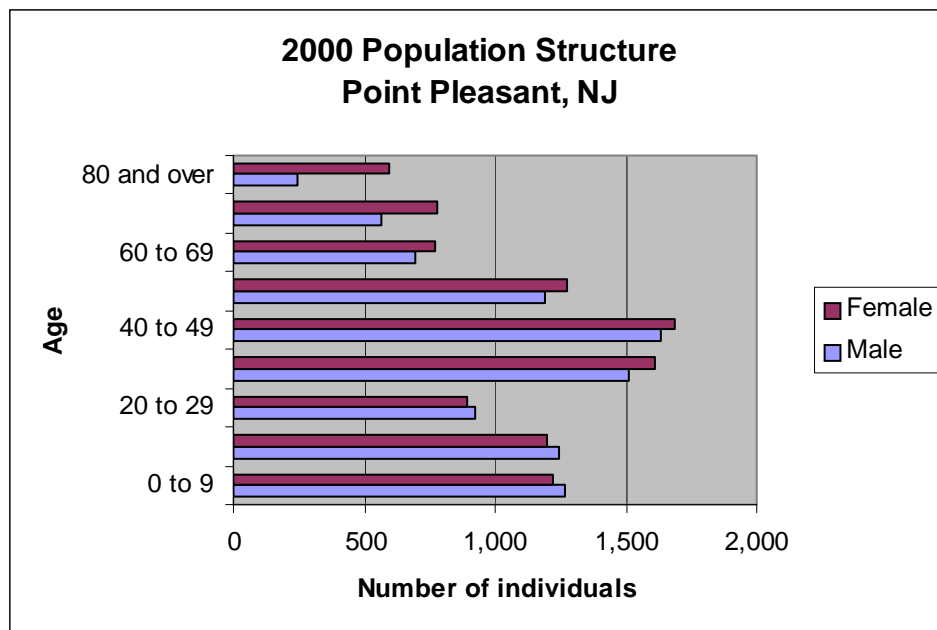


Figure 1. Point Pleasants population structure by sex in 2000

³ While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

⁴ These and all census data, unless otherwise referenced, can be found at U.S. Census: American Factfinder 2000 <http://factfinder.census.gov/home/saff/main.html>; census data used are for Point Pleasant borough and Point Pleasant Beach borough; (accessed June 28, 2007)

The majority of the population was white (97.8%) with 0.3% of residents black or African American, 0.5% Asian, 0.1% Native American, and none Pacific Islander or Hawaiian (see Figure 2). Only 2.4% of the population identified themselves as Hispanic/Latino (see Figure 3). Residents linked their background to a number of different ancestries including: Irish (32.7%), Italian (25.2%), German (21.5%), English (10%), and Polish (10%). With regard to region of birth, 79.7% were born in New Jersey, 16.5% were born in a different state and 3.1% were born outside of the U.S. (including 1.1% who were not United States citizens).

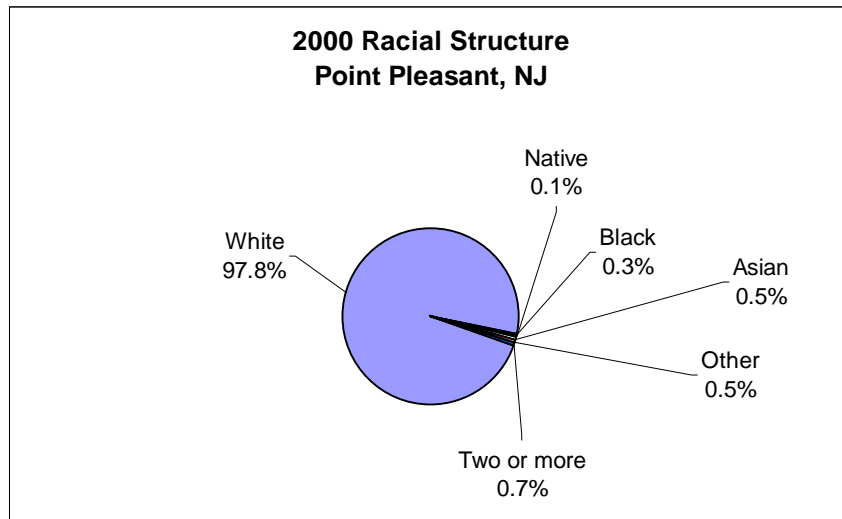


Figure 2. Racial Structure in 2000 (US Census Bureau 2000a)

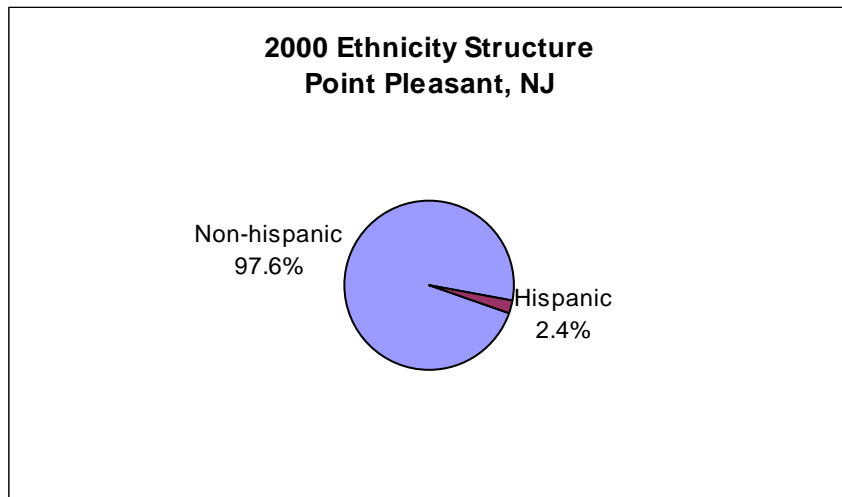


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000a)

For 94.5% of the population, only English was spoken in the home, leaving 5.5% in homes where a language other than English was spoken, including 0.9% of the population who spoke English less than “very well” according to the 2000 Census.

Of the population 25 years and over, 88.5% were high school graduates or higher and 27.8% had a bachelor’s degree or higher. Again of the population 25 years and over, 2.6% did not reach ninth grade, 8.8% attended some high school but did not graduate, 34.7% completed high school, 20.2% had some college with no degree, 5.8% received an associate’s degree, 20.1% earned a bachelor’s degree, and 7.7% received a graduate or professional degree.

Point Pleasant Beach - According to Census 2000 data, Point Pleasant Beach had a total population of 5,314, up 4.0% from a reported population of 5,112 in 1990. Of this 2000 total, 50.4% were male and 49.6% were female. The median age was 42.6 years and 78.1% of the population was 21 years or older while 21.6% was 62 or older.

Point Pleasant Beach’s age structure (see Figure 4) was similar to that of Point Pleasant in that it showed a preponderance of those in the 30 to 59 year age groups. Again, like Point Pleasant, the age group of 20-29 was small compared to the other age groups, showing that apparently young people are leaving the community after high school. The median age, however, was three years older, and a higher percentage of the population was over 62, indicating that Point Pleasant Beach may be more of a retirement community.

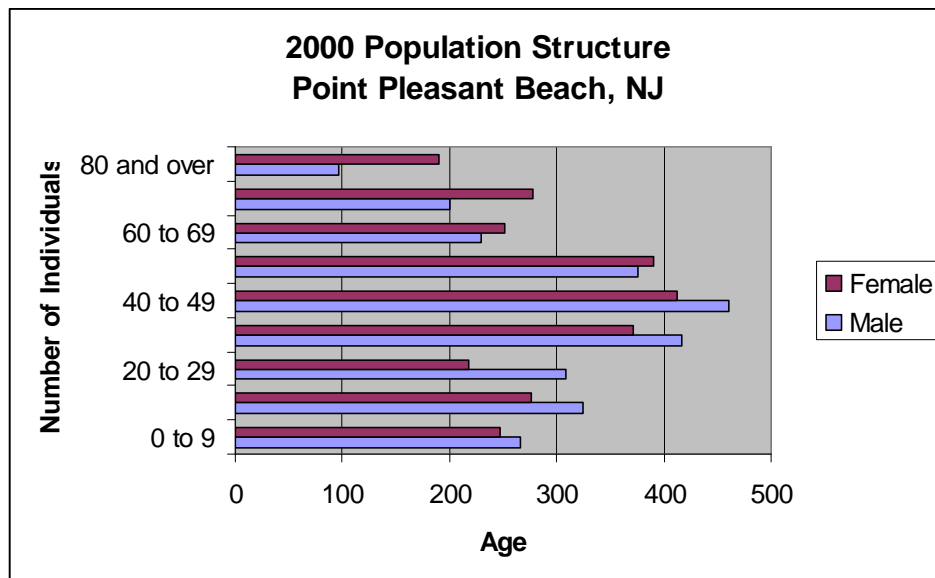


Figure 4. Population structure by sex in 2000 (US Census Bureau 2000a)

Like Point Pleasant, the majority of the population was white (96.7%) with 0.5% of residents black or African American, 1.0% Asian, 0.3% Native American, and 0.02% Pacific Islander or Hawaiian (see Figure 5). Only 4.4% of the population identified themselves as Hispanic/Latino (see Figure 6). Residents linked their backgrounds to a number of different ancestries including: Irish (28.5%), Italian (22.2%), German (19.5%), English (13.8%), and Polish (8.4%). With regard to region of birth, 68.6% were born in New Jersey, 24.7% were born in a different state and 5.8% were born outside of the U.S. (including 3.4% who were not United States citizens).

For 90.5% of the population, only English was spoken in the home, leaving 9.5% in homes where a language other than English was spoken, including 3.4% of the population who spoke English less than “very well” according to the 2000 Census.

Of the population 25 years and over, 87.1% were high school graduates or higher and 34.1% had a bachelor’s degree or higher. Again of the population 25 years and over, 3.8% did not reach ninth grade, 9.1% attended some high school but did not graduate, 24.3% completed high school, 21.3% had some college with no degree, 7.5% received an associate’s degree, 22.5% earned a bachelor’s degree, and 11.6% received either a graduate or professional degree.

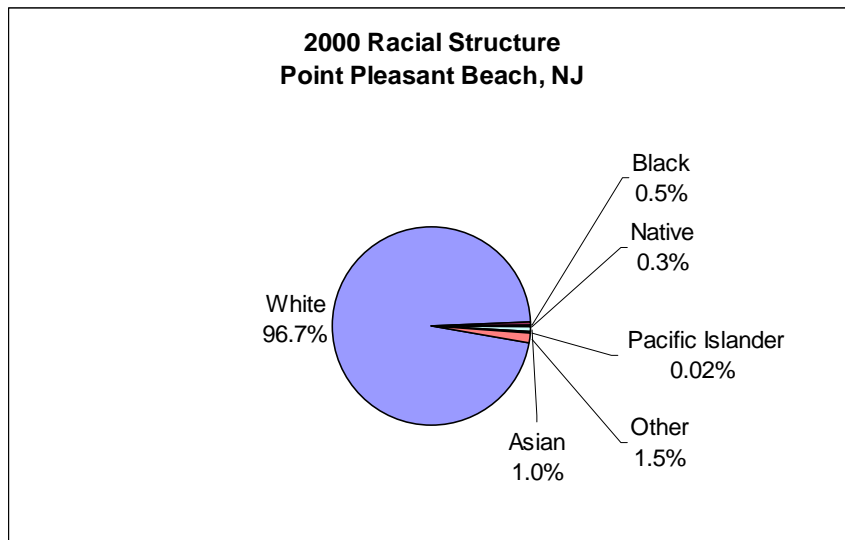


Figure 5. Racial Structure in 2000 (US Census Bureau 2000a)

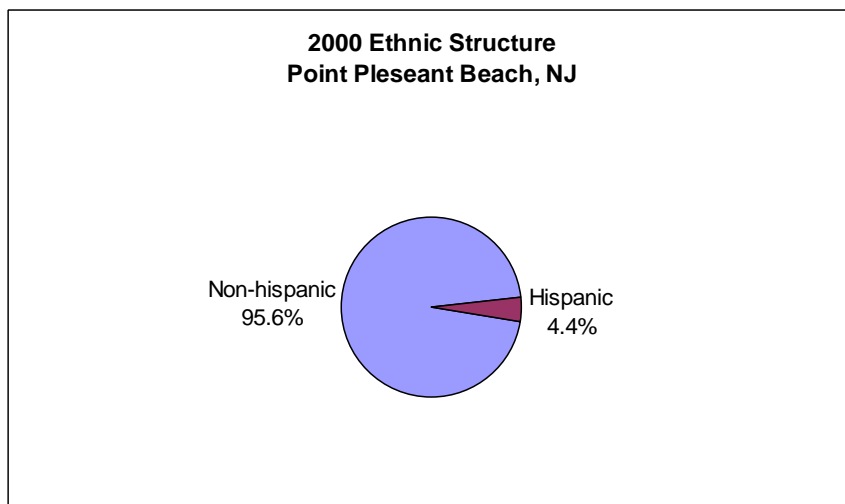


Figure 6. Ethnic Structure in 2000 (US Census Bureau 2000)

Although religion percentages are not available through the U.S. Census, according to the Association of Religion Data Archives (ARDA) in 2000, the religion with the highest number of congregations and adherents in Ocean County was Catholic with 33 congregations and 212,482 adherents. Other prominent congregations in the county were Jewish (35 with 11,500 adherents), and the United Methodist Church (28 with 9,534 adherents). The total number of adherents to any religion was up 21.9% from 1990 (ARDA 2000).

Issues/Processes

In 2005 a Virginia company was pushing to open the waters off New Jersey for pursuing menhaden with seine nets, an idea to which recreational fishermen were strongly opposed. Menhaden are a favorite bait fish for striped bass fishermen, and menhaden are also an important food source for striped bass (Asbury Park Press 2005).

There had been discussions in 2004 about further limiting the catch of certain recreationally targeted species, including striped bass (Freda 2004) and winter flounder, greatly concerning those involved in the recreational fishing business, whether as party boat captains or bait sellers. The Recreational Fishing Alliance has played a large role in lobbying the Atlantic States Marine Fisheries Commission and the State to minimize restrictions for the economic health of the recreational fishery (Moran 2005).

Cultural attributes

[Festival of the Sea](#) is an event held every September since 1975, where area restaurants present local seafood dishes. The [Greater Point Pleasant Charter Boat Association](#) holds the yearly two-day Mako Mania, considered by many to be the premier shark-fishing tournament in New Jersey.

INFRASTRUCTURE

Current Economy

The majority of the docks, bait and tackle shops, and other infrastructure for the commercial fishing industry are located in Point Pleasant Beach. However, because real estate is likely to be much more expensive within the borough of Point Pleasant Beach, the majority of fishermen are likely to live in the borough of Point Pleasant. Point Pleasant, located along the Manasquan Inlet, is also in itself an important destination for recreational fishing, with numerous boats docked in Point Pleasant along the river.

Point Pleasant - According to the U.S. Census 2000⁵, 66.5% (10,113 individuals) of the total population 16 years of age and over were in the labor force (see Figure 7), of which 2.5% were unemployed, 0.1% were in the Armed Forces, and 63.9% were employed.

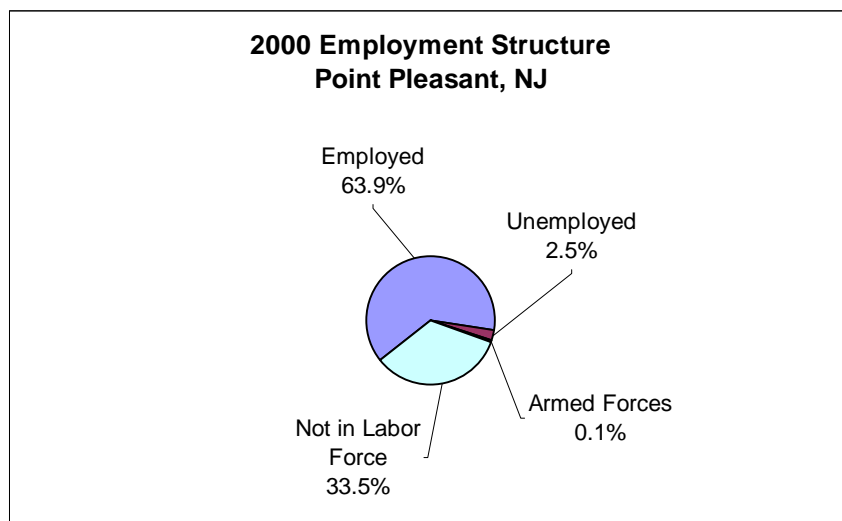


Figure 7. Employment structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 31 positions or 0.3% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 619 positions or 6.4% of jobs. Educational health and social services (23.4%), retail trade (12.4%), construction (10.9%), professional, scientific, management, administrative and waste management services (9.3%), arts, entertainment, recreation, accommodation and food services (8.2%), and finance, insurance, real estate and rental and leasing (7%) were the primary industries.

Median household income in Point Pleasant was \$55,987 (up 37.3% from \$40,798 in 1990 [US Census Bureau 1990]) and median per capita income was \$25,715. For full-time year round workers, males made approximately 54.5% more per year than females.

⁵ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

The average family in Point Pleasant consisted of 3.06 persons. With respect to poverty, 2% of families (up from 1.6% in 1990) and 3.2% of individuals earned below the official U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 15.9% of all families (of any size) earned less than \$35,000 per year.

In 2000, Point Pleasant had a total of 8,350 housing units of which 90.5% were occupied and 83.1% were detached one unit homes. Less than 10% (8%) of these homes were built before 1940. Mobile homes, vans, boats accounted for none of the housing units; 92.2% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$160,100. Of vacant housing units, 6.4% were used for seasonal, recreational, or occasional use. Of occupied units 20.2% were renter occupied.

Point Pleasant Beach - Much of the economy of Point Pleasant and Point Pleasant Beach is based on tourism, and a substantial segment of the tourist population travel to this area to fish. Even during the winter, Point Pleasant will sometimes maintain some tourism during years when fish are more plentiful during the winter months (Stoffle et al. 2008). The largest employers in Point Pleasant Beach are mostly related to the tourist industry: Jenkinson's Beach and Boardwalk (with a beach, amusement rides, aquarium, night club, and restaurants), Meridian Health Center, Food Town, Chef's International (restaurant chain), and motels.⁶ The most significant sources of employment in Point Pleasant, by contrast, are banks and car dealerships.⁷

According to the U.S. Census 2000⁸, 58.7% (2,617 individuals) of the total population 16 years of age and over were in the labor force (see Figure 8), of which 3.1% were unemployed, none were in the Armed Forces, and 55.6% were employed.

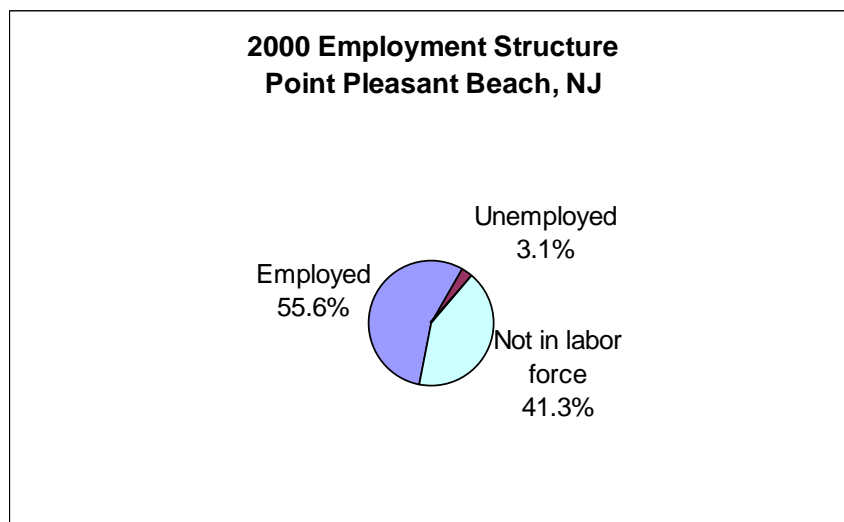


Figure 8. Employment structure in 2000 (US Census Bureau 2000)

⁶ Personal Communication, Point Pleasant Beach Chamber of Commerce, 2810 Bridge Ave., Point Pleasant Beach, NJ 08742, 6/24/05

⁷ Personal Communication, Point Pleasant Chamber of Commerce, 2803 Bridge Ave., Point Pleasant, NJ 08742, 6/27/05

⁸ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 65 positions or 2.6% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 104 positions or 4.4% of jobs. Educational health and social services (19.2%), arts, entertainment, recreation, accommodation and food services (14.6%), retail trade (11.8%), public administration (10.2%), professional, scientific, management, administrative and waste management services (9.4%), and finance, insurance, real estate and rental and leasing (7.2%) were the primary industries.

Median household income in Point Pleasant Beach was \$51,105 (up 48.9% from \$34,799 in 1990 [US Census Bureau 1990]) and median per capita income was \$27,853. For full-time year round workers, males made approximately 8.0% more per year than females (significantly different than in Point Pleasant).

The average family in Point Pleasant Beach consisted of 2.96 persons. With respect to poverty, 5% of families (up from 1.6% in 1990) and 6.1% of individuals earned below the official U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 18.3% of all families (of any size) earned less than \$35,000 per year.

In 2000, Point Pleasant Beach had a total of 3,558 housing units, of which 65.1% were occupied and 68.5% were detached one unit homes. Less than one third (28.4%) of these homes were built before 1940. Mobile homes, vans, boats accounted for none of the total housing units; 83.9% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$223,600. Of vacant housing units, 26.6% were used for seasonal, recreational, or occasional use. Of occupied units 37.1% were renter occupied.

Government

The City of Point Pleasant operates under the Council/Manager form of government. There are six members of Council, in addition to the Mayor. The Mayor has a four-year term, and the Council has staggered three-year terms (Borough of Point Pleasant nd).

Fishery involvement in government

Information on fishery involvement in government in Point Pleasant is unavailable through secondary data collection.

Institutional

Fishing associations

The [Fishermen's Dock Cooperative](#) on Channel Drive in Point Pleasant Beach is one of two active fishing cooperatives in New Jersey. Incorporated as a cooperative in the early 1950s, the "Co-op" is an integral part of the waterfront community of Point Pleasant Beach. The Co-op markets its members' catch, and offers them fuel, packing, and ice at a discounted rate. Becoming a member of the Co-op is difficult; it requires a vacancy and proof of being an able fishermen, as well as the purchase of a share in the Co-op (McCay et al. 1995). Many existing members of the Co-op are the sons of the original founders, and some are third or fourth generation fishermen (NJ Fishing nd).

[Garden State Seafood Association](#) in Trenton is a statewide organization of commercial fishermen and fishing companies, related businesses and individuals working in common cause to promote the interests of the commercial fishing industry and seafood consumers in New Jersey.

The [Jersey Coast Anglers Association](#) (JCAA) is an association of over 75 saltwater fishing clubs throughout the state. Founded in 1981, the purpose of the organization is to

unite and represent marine sport anglers to work towards common goals. The JCAA website (www.jcaa.org) also provides links for many NJ anglers associations.

Fishing assistance centers

Information on fishing assistance centers in Point Pleasant is unavailable through secondary data collection.

Other fishing related organizations

The [Greater Point Pleasant Charter Boat Association](#) in Township was formed in 1981. Its goals are: “To enhance the recreational fishing industry on the Manasquan River, and to aid in the improvement of the coastal fishery and collectively voice concerns on marine conservation and environmental issues”

The [Manasquan River Watershed Association](#) is a non-profit organization focused on protecting and restoring the Manasquan River through public education, restoration, and regional planning initiatives.

Physical

Point Pleasant is within easy reach of Newark Airport and Port Newark/ Elizabeth and only a bridge crossing away from both New York and Philadelphia (NJ Fishing nd). Specifically, Point Pleasant is located about 42 miles from Trenton, NJ and 67 miles from New York City. Point Pleasant is only a few miles from the Garden State Parkway which links to major highways such as I-195. The borough is about 2 miles from the open Atlantic Ocean, and is in close proximity to a portion of the large Barneget Bay. [New Jersey Transit](#) provides service from Point Pleasant to throughout the state and region. Because of its large recreational fishing component, there are many bait and tackle stores in town (Ocean City Maryland 1997; Okuma Fishing Tackle Co 2004).

INVOLVEMENT IN NORTHEAST FISHERIES⁹

Commercial

The fleet of the [Fishermen’s Dock Cooperative](#) is comprised mostly of smaller draggers, up to about 80 feet in length. They fish mostly in the New York Bight, in mixed trawl fisheries. “They primarily target fluke, silver hake and squid but in the past have also had significant landings of winter flounder, bluefish, monkfish and scallop. While most of the Co-op member's harvest is sold to wholesale markets in the Mid-Atlantic States and Southern New England, a significant amount makes its way directly to consumers via the seafood market and restaurant adjacent to the dock.” Members of the Co-op recently got together to raise \$1 million for necessary repairs to their dock (Stoffle et al. 2008).

⁹ In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

The development of the shellfishery here has been very important to maintaining a commercial fishing industry in Point Pleasant. Point Pleasant Beach was listed as the eighth largest commercial fishing port on the East Coast in 2003. There were no landings values listed for Point Pleasant Beach; home port landings values and data on vessels have been combined for Point Pleasant and Point Pleasant Beach here. The landings values for Point Pleasant show the highest value species as surf clams and ocean quahogs, followed by scallops and summer flounder, scup, black sea bass (see Table 1). The value of the sea scallop fishery was much higher in 2006 than in the 10-year average. Other fisheries have declined in both the commercial and recreational sectors resulting from both a decrease in catches and an increase in regulation, and facilities previously used for processing finfish are now used for offloading and trucking quahogs and surfclams. The ocean quahogs and scallops as well as most of the surfclams are trucked away elsewhere for shucking, as Point Pleasant no longer has a processing plant here with the exception of a small facility where some surfclams are shucked by hand. Otter trawls and gillnetting continue to be important for this fleet as well, and other important species include monkfish, *Loligo* squid, and summer flounder (Stoffle et al. 2008). Despite declining catches in some areas, the overall value of this fishery increased for both home-ported vessels and the value of landings brought into Point Pleasant from 1997-2006 (see Table 2). The number of vessels and the level of fishing increased over the 10-year time period for Point Pleasant and Point Pleasant Beach.

Landings by Species

Table 1. Dollar value by Federally Managed Groups of landings in Point Pleasant

	Average from 1997-2006	2006 only
Surf Clams, Ocean Quahog	9,252,589	8,342,197
Scallop	3,931,203	7,875,964
Summer Flounder, Scup, Black Sea Bass	1,782,580	2,657,675
Monkfish	1,515,511	888,104
Lobster	800,994	1,322,967
Other¹⁰	704,087	326,210
Squid, Mackerel, Butterfish	555,114	584,369
Largemesh Groundfish¹¹	354,799	456,840
Smallmesh Groundfish¹²	250,357	66,052
Dogfish	132,702	0
Bluefish	97,360	69,352
Skate	37,860	36,549
Tilefish	2,757	CONFIDENTIAL
Herring	374	3,088

¹⁰ "Other" species includes any species not accounted for in a federally managed group

¹¹ Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

¹² Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

Vessels by Year¹³

Table 2. All columns represent vessel permits or landings value combined between 1997-2006 for Point Pleasant / Point Pleasant Beach

Year	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port (\$)	Level of fishing landed port (\$)
1997	66	28	6,172,651	16,905,177
1998	58	24	8,171,193	16,712,151
1999	63	23	10,612,851	17,862,091
2000	71	26	9,855,759	17,769,138
2001	78	27	8,245,705	18,924,389
2002	79	27	8,897,148	22,849,561
2003	71	29	10,994,699	22,849,561
2004	71	27	12,732,616	19,222,163
2005	72	24	15,733,873	21,653,319
2006	71	26	17,164,411	22,632,286

Vessels home ported = No. of permitted vessels with location as homeport

Vessels (owner's city) = No. of permitted vessels with location as owner residence¹⁴

Level of fishing home port (\$) = Landed value of fisheries associated with home ported vessels

Level of fishing landed port (\$) = Landed value of fisheries landed in location

Recreational

Point Pleasant is the most important community in New Jersey for recreational fishing. Fishermen travel from all over the state and beyond to fish from the numerous party and charter boats, from their own private recreational boats, or to participate in surf-fishing from several key spots. The New Jersey Department of Environmental Protection, Division of Fish and Wildlife, which licenses party and charter boats, lists 29 for Point Pleasant and Point Pleasant Beach (Giordan et al. 2000), but in some cases fishermen may own a charter license but rarely if ever use their boat for charter trips (Stoffle et al. 2008). There are at least 18 charter boats listed as members of the [Greater Point Pleasant Charter Boat Association](#). Between 2001- 2005, there were 40 charter and party vessels making 8,032 total trips registered in NMFS logbook data by charter and party vessels in Point Pleasant carrying a total of 161,601 anglers.

In New Jersey, the charter/party fleet is the largest on east coast. Many vessels are over 120ft long and carry over 150 people.¹⁵

Subsistence

Some owners of charter and party boats claim that before the bag limits for recreational fishing were increased, many of their clientele were coming fishing primarily as a means of consumption rather than sport, but that the clientele has shifted to represent more tourists fishing for the fun of it (Stoffle et al. 2008).

¹³ Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

¹⁴ The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

¹⁵ Community Review Comments, Bruce Freeman, NJ Coast Anglers Association, 1201 Route 37 East, Suite 9, Toms River, NJ 08753, October 2, 2007

FUTURE

Information on future plans or people's perception of the future in Point Pleasant is unavailable through secondary data collection.

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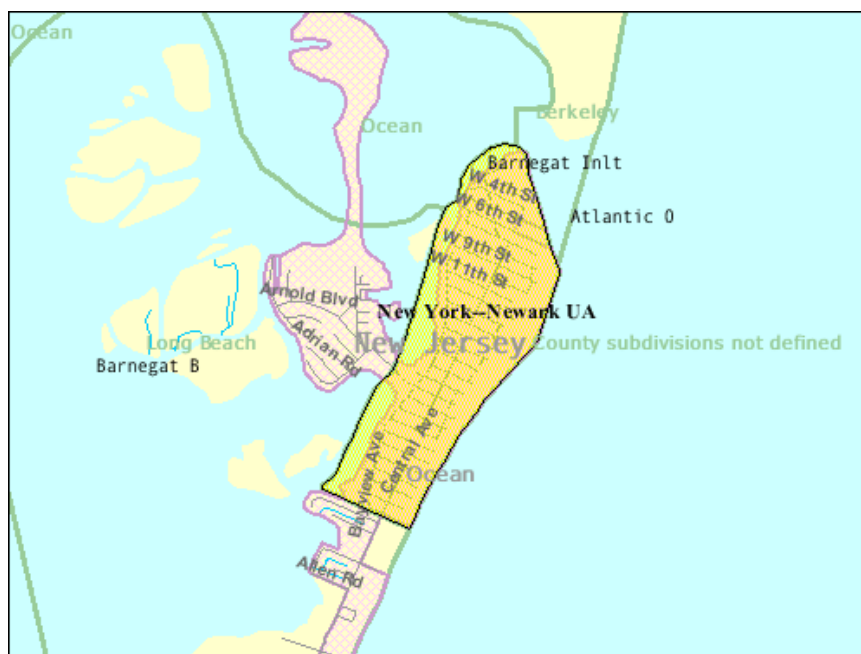
LONG BEACH ISLAND/BARNEGAT LIGHT, NJ¹

Community Profile²

PEOPLE AND PLACES

Regional orientation

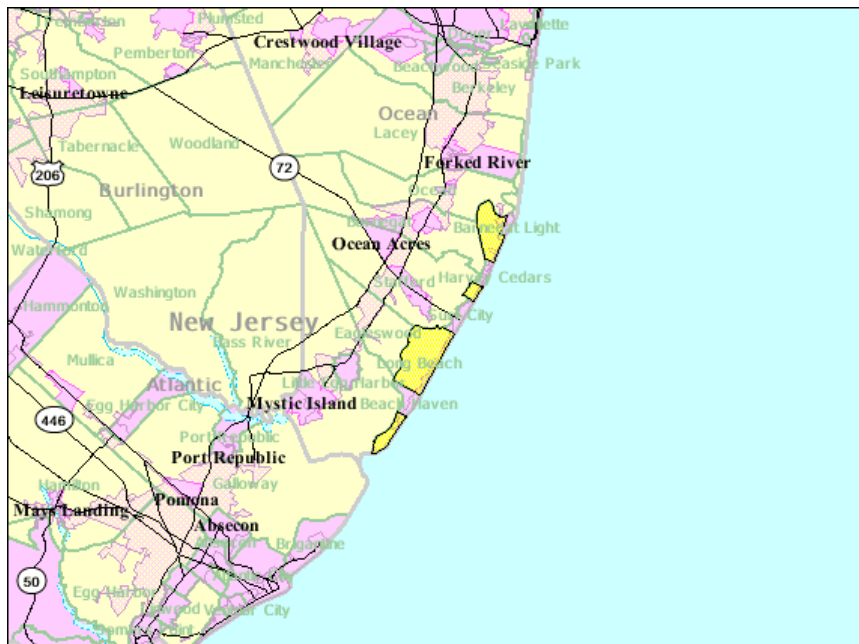
Long Beach Island is an 18-mile barrier beach on New Jersey's eastern shore, about 4 to 6 miles from mainland New Jersey (LBInet 2008), within Ocean County. It is made up of the Township of Long Beach (39.69° N, 74.14° W), along with five independent boroughs: Barnegat Light, Beach Haven, Harvey Cedars, Ship Bottom, and Surf City. Long Beach Island includes the ports of Barnegat Light and Beach Haven and ports in the surrounding area on the mainland which include Tuckerton, Barnegat, Waretown, and Forked River. The city of Barnegat Light (39.75° N, 74.11° W) is a major commercial port (USGS 2008), while much of the rest of the island specializes in recreational fishing.



Map 1. Location of Barnegat Light, NJ (US Census Bureau 2000)

¹ These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

² For purposes of citation please use the following template: "Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov."



Map 2. Location of Long Beach, NJ (US Census Bureau 2000)

Historical/Background

The Dutch explorer Captain Cornelius Jacobsen May landed on Long Beach Island in the early 1600s. The island was long known for its many shipwrecks from the strong tides here, so a number of lifesaving stations were constructed along its length, including the Barnegat Light lighthouse. Long Beach Island was at one time an important fishing and whaling center, although it was accessible only by boat. Later it became a hunting and fishing playground for wealthy gentlemen. The island became more accessible in 1886 when a railroad trestle was built connecting it with the mainland. Long Beach Island consists of a number of communities. In 1899 several of these communities were combined into the township of Long Beach; the rest remained as independent boroughs (LBI.net 2008).

Barnegat Light is one of the 11 municipalities on Long Beach Island. A small town of less than one square mile in area, it is found at the northern tip of the barrier island. The town is named after the lighthouse located here, which has guided ships along the New Jersey coast for generations.

Until the 1995 construction of a jetty by the Army Corps of Engineers, boats on the other side of the island had to pass through one of several narrow and often dangerous inlets. This difficulty limited the growth of maritime industries along this part of the New Jersey shore, in contrast with the tourism industry, which has taken advantage of the area's numerous sandy beaches. Along with the jetty, the Corps project also produced a three-quarter-mile beach and a fishing pier, further developing the tourist appeal of Barnegat Light. Commercial and recreational fishing have a long tradition in this area, and both industries are still strong today (McCay and Cieri 2000).

Demographics³

Long Beach Township

According to Census 2000 data⁴, Long Beach township (which encompasses all of Long Beach Island with the exception of the five independent boroughs) had a total population of 3,329, down 3.6% from 3,452 in 1990 (US Census Bureau 1990). Of this total in 2000, 52.6% were female and 47.4% were male. The median age was 57.3 years and 86.6% of the population was 21 years or older while 42.7% were 62 or older. The population here can swell to more than 100,000 on a hot summer day (Tutelian 2006).

Long Beach's age structure in 2000 showed an aging population, with a preponderance of residents in the 60 to 69 years age group, followed by the 70-79 years age group, indicating a large retirement population. There were few residents here under the age of 30, and more women over the age of 80 than in any category from age 0-40 (see Figure 1).

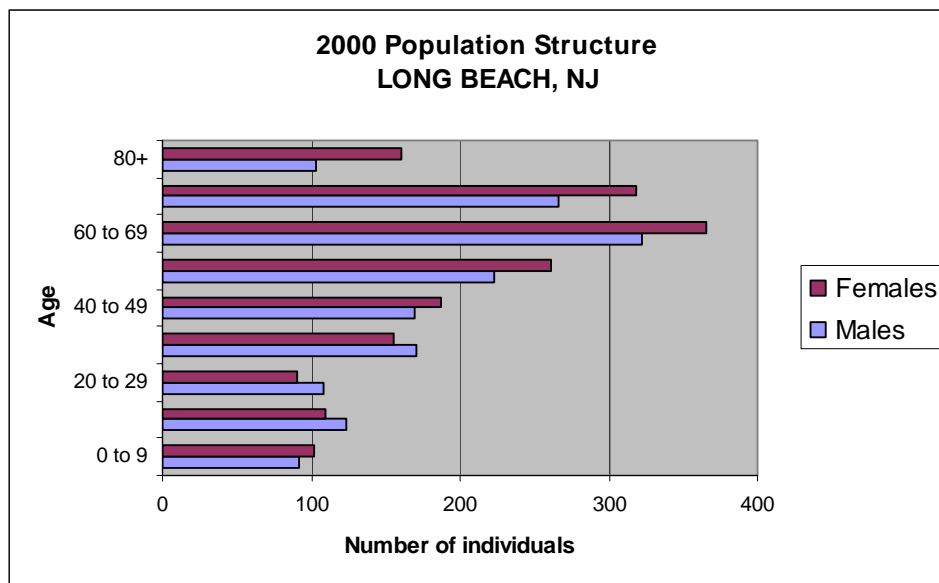


Figure 1. Long Beach's population structure by sex in 2000 (US Census Bureau 2000)

The majority of the population of Long Beach in 2000 was white (98.5%), with 0.4% of residents black or African American, 0.1% Native American, 0.4% Asian, and 0.1% Pacific Islander or Hawaiian (Figure 2). Only 2.1% of the population identified themselves as Hispanic/Latino (Figure 3). Residents linked their heritage to a number of different ancestries including: Irish (25.0%), German (24.5%), English (16.5%), Italian (14.7%), and Polish (10.3%). With regard to region of birth, 56.8% were born in New Jersey, 39.2% were born in a different state and 3.7% were born outside of the U.S. (including 1.4% who were not United States citizens).

³ While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

⁴ These and all census data, unless otherwise referenced, can be found at <http://factfinder.census.gov/home/saff/main.html>; census data used are for Long Beach township

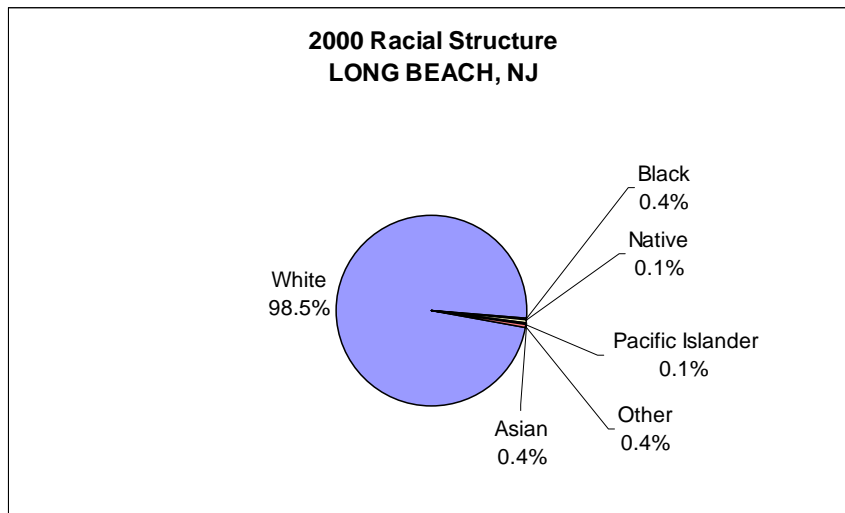


Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

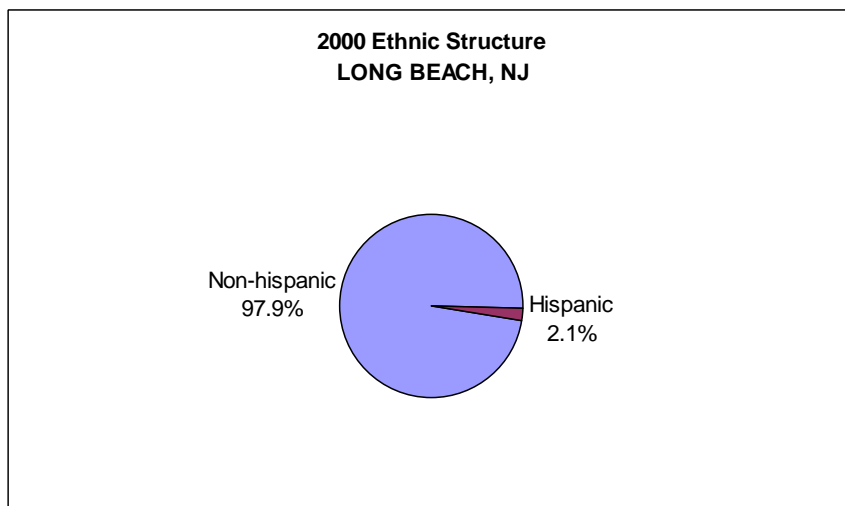


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 92.4% of the population 5 years old and higher in 2000 only English was spoken in the home, leaving 7.6% in homes where a language other than English was spoken, including 1.8% of the population who spoke English less than “very well.”

Of the population 25 years and over, 92.0% were high school graduates or higher and 36.7% had a bachelor’s degree or higher. Again of the population 25 years and over, 2.0% did not reach ninth grade, 5.9% attended some high school but did not graduate, 28.8% completed high school, 21.8% had some college with no degree, 4.7% received their associate’s degree, 23.9% earned their bachelor’s degree, and 12.8% received either a graduate or professional degree.

Barnegat Light

According to Census 2000 data⁵, Barnegat Light (an independent borough on Long Beach Island) had a total population of 764, up 13.2% from 1990 (US Census Bureau 1990). Of this total in 2000, 49.1% were female and 50.9% were male. The median age was 54.9 years and 83.9% of the population was 21 years or older while 39.5% were 62 or older.

⁵ These and all census data, unless otherwise referenced, can be found at <http://factfinder.census.gov/home/saff/main.html>; census data used are for Barnegat Light borough

Barnegat Light’s age structure showed a preponderance of 60 to 69 years age group, indicating a large retirement population. In a perhaps related phenomenon, the age group of 20-29 is very small, with almost no females (Figure 4). Among the already small numbers of children and young people, young females are apparently almost uniformly leaving the community after high school.

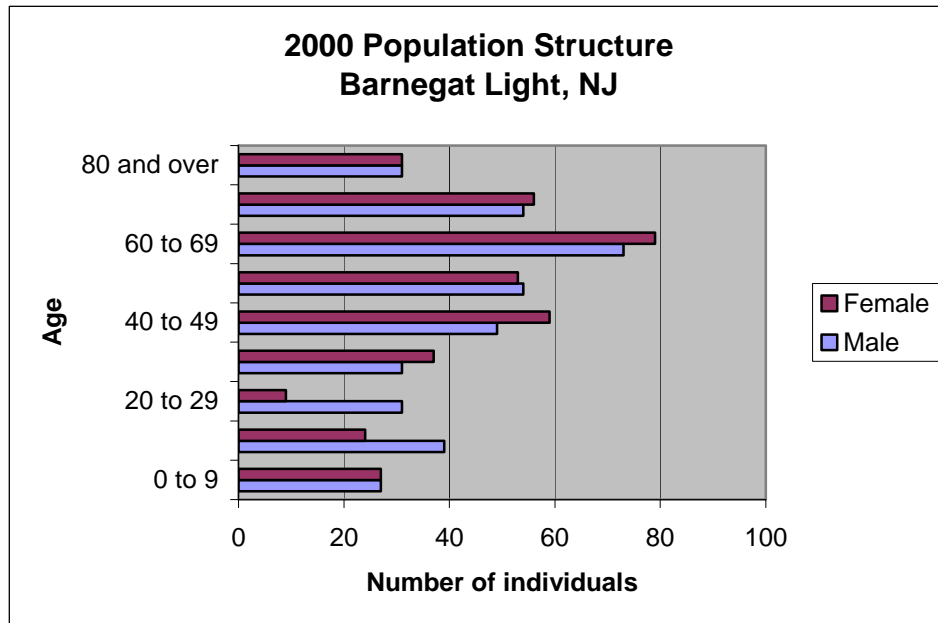


Figure 4. Barnegat Light’s population structure by sex in 2000 (US Census Bureau 2000)

The majority of the population of Barnegat Light in 2000 was white (98.3%), with 0.5% of residents black or African American, no Native Americans, 0.3% Asian, and 0.3% Pacific Islander or Hawaiian (Figure 5). Only 0.8% of the total population was Hispanic/Latino (Figure 6). Residents linked their heritage to a number of ancestries including: Irish (28.0%), German (23.2%), English (17.4%), and Italian (14.6%). With regard to region of birth, 55.7% were born in New Jersey, 39.8% were born in a different state and 3.2% were born outside of the U.S. (including 0.4% who were not United States citizens).

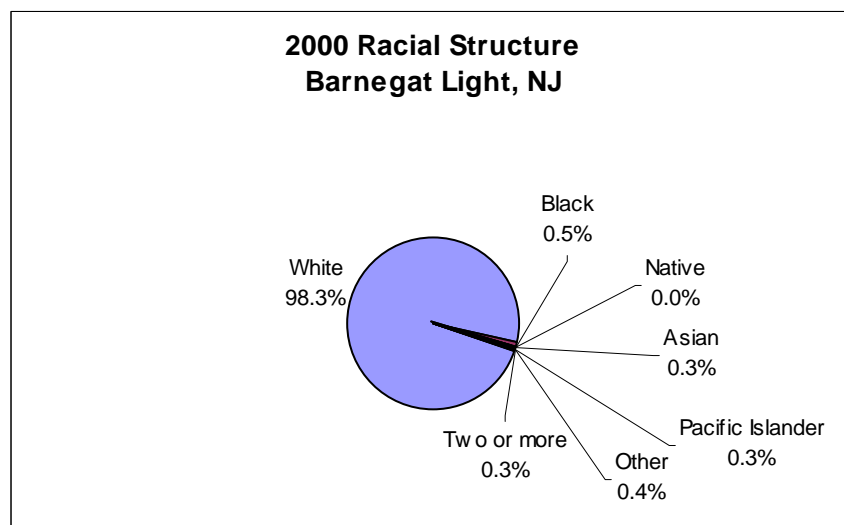


Figure 5. Racial Structure in 2000 (US Census Bureau 2000)

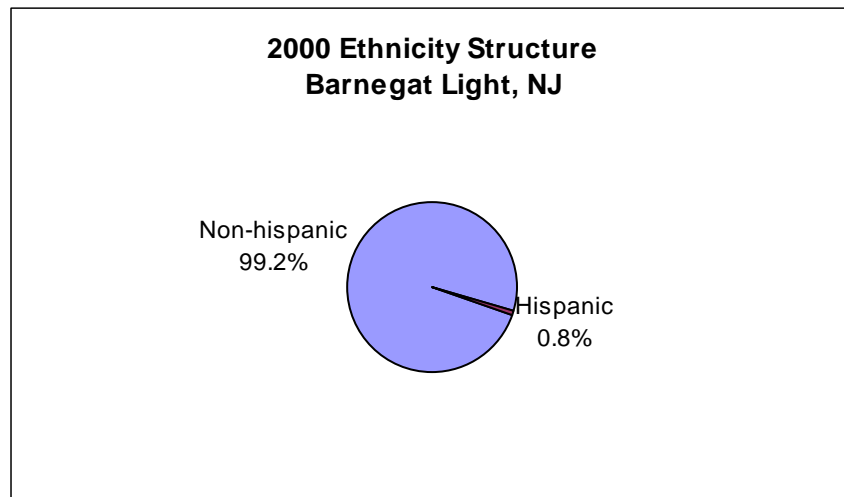


Figure 6. Ethnic Structure in 2000 (US Census Bureau 2000)

For 92.7% of the population, only English was spoken in the home, leaving 7.3% in homes where a language other than English was spoken, including 1.5% of the population who spoke English less than “very well.”

Of the population 25 years and over, 92.1% were high school graduates or higher and 38.9% had a bachelor’s degree or higher. Again of the population 25 years and over, 2% did not reach ninth grade, 5.9% attended some high school but did not graduate, 29.3% completed high school, 17% had some college with no degree, 6.9% received their associate’s degree, 21.5% earned their bachelor’s degree, and 17.4% received either a graduate or professional degree.

Although religious percentages are not available through the U.S. Census, according to the Association of Religion Data Archive (ARDA) in 2000 the religion with the highest number of congregations and adherents in Ocean County was Catholic with 33 congregations and 212,482 adherents. Other prominent congregations in the county were Jewish (35 with 11,500 adherents), The United Methodist Church (28 with 9,534 adherents), Evangelical Lutheran Church in America (11 with 6,731 adherents), and Presbyterian Church (U.S.A.) (11 with 6,489 adherents). The total number of adherents to any religion was up 21.9% from 1990 (ARDA 2000).

There are seventeen houses of worship listed on Long Beach Island, including six in Long Island Township, of which four are Catholic and one is Jewish, and the rest are Protestant (LBI.net 2008).

Issues/Processes

As of 2006 the Army Corps of Engineers wishes to begin a beach nourishment project on Long Beach Island to restore the eroding beaches here, but is meeting with resistance from homeowners, who are concerned that the planned dunes will obstruct their water view, and that more beach space will mean more beach goes in front of their homes. The government would require easements from property owners to access the shore for construction, and the home owners are reluctant to provide them. If the beach nourishment project does not take place, the beach and the waterfront homes may soon be lost (Anon 2006).

One emerging trend (as of 2006) on Long Beach Island and in other similar summer resort areas is that as real estate prices soar, many year-round residents are selling their homes for bigger homes on the mainland, tempted by the large price they can get. These homes are bought up by those using them as summer homes. The results are dwindling year-

round populations on places like Long Beach Island, and a resulting loss in year-round businesses and students in local schools (AP 2005).

Like many other coastal communities, Barnegat Light must deal with the forces of rapidly increasing home prices and the resulting gentrification. Because the community is physically so small, there is very little land area for development, and the development of condominiums or other properties generally involves land in existing use. The high housing costs are encouraging many families to move to the mainland, and many of those employed in the commercial fishing industry now do not reside in Barnegat Light (Stoffle 2003).

Some beach areas on Long Beach are closed during the summers for piping plover nesting; local anglers complain this restricts them from prime beach area from which to cast (Patberg 2006).

Cultural attributes

There are a number of events throughout the summer held all over Long Beach Island. [Long Beach Island Surf Fishing Tournament](#) is an annual competition that has been held for over fifty years. It takes place throughout most of October and November, with cash prizes and trophies being awarded in angling competitions for bluefish and striped bass, and includes a popular surfcasting seminar.

[Chowderfest](#) is an annual event that is held in Beach Haven in early October and features a competition between all the restaurants on Long Beach Island as they vie for the honor of creating the tastiest chowder. The [Alliance for a Living Ocean](#) hosts beach seining events and the annual FantaSea Festival to educate the public about the coastal resources surrounding Long Beach Island. Barnegat Light holds an annual Blessing of the Fleet in the Barnegat Light Yacht Basin each June to pray for the community's commercial fishermen (LBInet 2008). Viking Village has a very popular Dock Tour that has won several awards and in September 2007, hosted the New Jersey Mayors Conference.⁶

INFRASTRUCTURE

Current Economy

Long Beach Township

Tourism and real estate are the two major industries in Long Beach (Tutelian 2006). Total property values on the island exceed \$11 billion (Zedalis 2005). According to the U.S. Census 2000⁷, 44.7% (1,351 individuals) of the total population 16 years of age and over were in the labor force, of which 2.3% were unemployed, no residents were in the Armed Forces, and 42.5% were employed. It should be noted that 55.3% of the population 16 and over were not in the labor force at all (Figure 7). This high percentage relative to other locations further reinforces the nature of Long Beach as a retirement community.

⁶ Community Review Comments, Greg DiDomenico, Garden State Seafood Association, 212 West State Street, Trenton, NJ, 08608, August 24, 2007

⁷ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.



Figure 7. Employment Structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 10 positions or 0.8% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 141 positions or 11.0% of jobs. Educational health and social services (18.2%), arts, entertainment, recreation, accommodation and food services (17.1%), construction (14.6%), and retail trade (11.5%) were the primary industries.

Median household income in Long Beach was \$48,697 (up 53.3% from \$31,775 in 1990 [US Census Bureau 1990]) and median per capita income was \$33,404. For full-time year round workers, men made approximately 33.2% more per year than women.

The average family in Long Beach consisted of 2.50 persons. With respect to poverty, 3.8% of families (down from 4.2% in 1990 [US Census Bureau 1990]) and 5.1% of individuals were below the U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 18.4% of all families (of any size) earned less than \$35,000 per year (the poverty threshold for a family of nine).

In 2000, Long Beach had a total of 9,023 housing units of which 18.4% were occupied and 74.1% were detached one unit homes. Only 5.0% of these homes were built before 1940. Mobile homes/vans/boats accounted for 4.3% of the total housing units; 88.6% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$334,400. Of vacant housing units, 83.3% were used for seasonal, recreational, or occasional use. Of occupied units, 13.9% were renter occupied.

Barnegat Light

The small businesses of Barnegat Light are very reliant on the summer tourist economy and the year round fishing industry. The town relies heavily on its commercial fishing industry year round, but in winter it becomes the economic mainstay for the town – employing as many as 150 local people to work at the marinas (McCay and Cieri 2000). The most significant sources of employment in the town are the fishing industry and real estate.⁸

According to the U.S. Census 2000, 46.9% (305 individuals) of the total population 16 years of age and over were in the labor force, of which 1.2% were unemployed, 0.8% were in the Armed Forces, and 44.9% were employed. It should be noted that 53.1% of the

⁸ Personal Communication, Borough of Barnegat Light, Municipal Office, 3 W 10th St., Barnegat Light, NJ 08006, June 21, 2005

population 16 and over are not in the labor force at all (Figure 8). This high percentage relative to other locations further reinforces the nature of Barnegat Light as a retirement community.

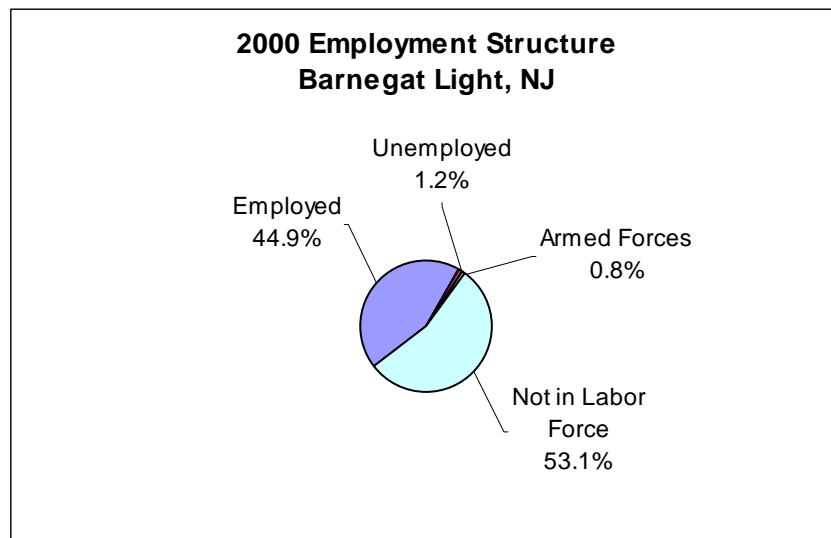


Figure 8. Employment Structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 24 positions or 8.2% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 55 positions or 18.8% of the labor force. Educational health and social services (16.8%), arts, entertainment, recreation, accommodation and food services (11%), construction (10.3%), finance, insurance, real estate and rental and leasing (10.3%), and professional, scientific, management, administrative and waste management services (9.2%) were the primary industries.

Median household income in Barnegat Light was \$52,361 (up 17.3% from \$37,955 in 1990 [US Census Bureau 1990]) and median per capita income was \$34,599. For full-time year round workers, males made approximately 17.6% more per year than females.

The average family in Barnegat Light consisted of 2.6 persons. With respect to poverty, 2.6% of families (down from 4.2% in 1990 [US Census Bureau 1990]) and 4.7% of individuals were below the U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 33.7% of all families of any size earned less than \$35,000 per year (the poverty threshold for a family of nine).

In 2000, Barnegat Light had a total of 1,207 housing units of which 30.7% were occupied and 88.4% were detached one unit homes. Only 3.6% of these homes were built before 1940. Mobile homes/vans/boats accounted for 0.2% of the total housing units; 86.4% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$299,400. Of vacant housing units, 93.4% were used for seasonal, recreational, or occasional use. Of occupied units, 12.1% were renter occupied.

Government

The township of Long Beach is located in Ocean County and is governed by a board of three commissioners, one of whom is the mayor (Township of Long Beach nd). An elected mayor and a six-person borough council run Barnegat Light's local governance (Barnegat Light nd).

Fishery involvement in government

The local government is not directly involved in the fishing industry in Barnegat Light. However, the mayor himself owns several scallop boats.⁹ The [Barnegat Bay National Estuary Program](#) is one of 28 estuaries of “national significance” designated and federally funded by the US Environmental Protection Agency. It is a partnership of federal, state, and municipal agencies as well as non-profit organizations and businesses working together to protect this estuary.

Institutional

Fishing associations

The [Beach Haven Charter Fishing Association](#) represents charter boats in the borough of Beach Haven and around Long Beach Island. [Blue Water Fishermen’s Association](#) is located in Barnegat Light. This association is made up of tuna and swordfishermen as well as others involved in the commercial fishery of highly migratory species. Every vessel at Viking Village is a member of the Garden State Seafood Association and the Monkfish Defense Fund. In addition, the scallop fleet are members of the Fisheries Survival Fund.¹⁰

[Garden State Seafood Association](#) in Trenton is a statewide organization of commercial fishermen and fishing companies, related businesses and individuals working in common cause to promote the interests of the commercial fishing industry and seafood consumers in New Jersey.

The [Jersey Coast Anglers Association](#) (JCAA) is an association of over 75 saltwater fishing clubs throughout the state. Founded in 1981, the purpose of the organization is to unite and represent marine sport anglers to work towards common goals. The JCAA website (www.jcaa.org) also provides links for many NJ anglers associations.

Fishery assistance centers

No fishing assistance centers were identified through secondary sources in this research.

Other fishing related organizations

The [Alliance for a Living Ocean](#) on Long Beach Island is focused on promoting and maintaining clean water and a healthy coastal environment. They host a number of educational events including eco tours, beach walks, and seining, and also hold an annual festival. The [Recreational Fishing Alliance](#), a national lobbying group, is headquartered near Barnegat Light.

Physical

Long Beach Island is a barrier island with the Atlantic Ocean on one side, and Barnegat Bay and Little Egg Harbor on the other. Ocean County has three general aviation airports – Eagles Nest Airport at West Creek, Lakewood Airport at Lakewood, and Robert J. Miller Airpark in Berkeley Township – but none of these has regularly scheduled service (Ocean County Library nd). Barnegat Light is at 52 miles from Atlantic City International Airport, 72 miles from Trenton Mercer Airport, 78 miles from the Philadelphia International Airport and 98 miles from the Newark Liberty International Airport. Toms River is 29 miles from Long Beach and Atlantic City is 47 miles away. New York City is about 102 miles by

⁹ Personal Communication, Borough of Barnegat Light, Municipal Office, 3 W 10th St., Barnegat Light, NJ 08006, June 21, 2005

¹⁰ Community Review Comments, Greg DiDomenico, Garden State Seafood Association, 212 West State Street, Trenton, NJ, 08608, August 24, 2007

car. Route 72 is the only road connecting Long Beach Island with the New Jersey mainland; it connects Ship Bottom with Beach Haven West and Manahawkin.

Long Beach Island has a number of bait and tackle shops including [Jingles Bait and Tackle](#), [Surf City Bait and Tackle](#), and [Fisherman's Headquarters](#). There is also a number of marinas located along the island (LBIWC nd). [Sportsman's Marina](#) bills itself as a fishing and crabbing marina, and also offers boat rentals. Ocean County lists seven marinas in Long Beach Township and at least 30 more along the island (OCDP 2007). Hagler's Marina is one in Brant's Beach with 66 slips offering gas, bait, tackle, ice, and supplies; another is Escape Harbor Marina. There are also four boat ramps listed for Long Beach Island (LBIWC nd).

Barnegat Light is one of the most important fishing ports in Ocean County. Barnegat Light is 16.2 miles from Toms River, NJ, 67.2 miles from Jersey City, NJ, and 67.2 miles from New York, NY. Docking is available through five marinas in Barnegat Light. The two largest docks have 36 full-time resident commercial boats, working year round, as well as recreational vessels and transient vessels. One of these two largest docks is completely occupied by commercial boats; the owners are also commercial fishermen. These commercial boats include seven scallopers, ten longliners that fish for tuna, swordfish, and tilefish, and about nine inshore-fishing net boats. The dock also has three offloading stations. The second of the largest docks accommodates ten commercial boats, fifteen charter boats, and twenty-five recreational vessels. The three remaining docks can each accommodate approximately 30- 35 boats, most of which are recreational boats and charter boats. Most of the recreational and sport fishing boats that utilize this port are here for part of the year, usually from May or June through early October (Wilson et al. 1998).

Involvement in Northeast Fisheries¹¹

Commercial

Barnegat Light, on the north end of Long Beach Island, is one of New Jersey's largest commercial fishing ports. Barnegat Light port has a significant offshore longline fishery, targeting tuna species (especially yellow fin and big eye) for most of the year, and swordfish part of the year. However, to avoid confidentiality issues due to a small number of dealers, all Barnegat Light/Long Beach landings are combined.

Located adjacent to the formerly infamous Barnegat Inlet, Barnegat Light's two commercial docks host a range of vessels from small, local day boats to globe-spanning longliners. Several fishermen in Barnegat Light pioneered the deep water tilefish fishery in the 1970s, successfully marketing this fish as the "poor man's lobster." Barnegat Light is the home port of many members of the East Coast's longline fleet. Barnegat Light longliners routinely fish in the high seas, targeting several species of tuna as well as swordfish on trips that last one to several weeks.

Barnegat Light is also home to several state-of-the-art scallop vessels and a fleet of smaller, inshore gillnetters (NJ Fishing nd). The scallop fleet is made up both of larger

¹¹ In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

vessels which may spend several days at sea at a time, fishing for scallops throughout the Mid-Atlantic, and several vessels which engage in “day trip” scalloping closer to the coast. The day trips can also be an important means for full-time scallopers and some other fishermen to subsidize their catch, as scallop vessels do not need to use their days at sea to fish for scallops inshore (Stoffle 2003).

Viking Village, one of Barnegat Light’s two commercial docks, is one of the largest suppliers of fish and seafood on the Eastern Seaboard. Each year over 4 million pounds of seafood are packed out over the commercial dock of Viking Village and shipped locally and internationally. Viking Village is homeport to seven scallopers, ten longliners and about nine inshore-fishing net boats, which fish blues, weakfish, monkfish, dogfish and shad. Each boat is independently owned and uses Viking Village for pack-out, marketing and sale of the catch. Some local restaurants and seafood dealers purchase products from Viking Village directly, including Wida's, Surf City Fishery, Beach Haven Fishery and Cassidy's Fish Market. Viking Village and the boats docked there employ about 200 people (NJ Fishing nd). There are also a number of bait and tackle retailers located in town, such as [Barnegat Light Bait and Tackle](#) and Eric’s Bait and Boat (LBIWC nd). Viking Village is home to some of the last remaining larger gillnet vessels. While monkfish landings are quite high for this area, croaker and bluefish are also significant when compared to other areas. Due to management measures, dogfish, shad, and striped bass are no longer species fishermen can harvest out of this port.¹²

Landings and vessel data combine Barnegat Light with Long Beach Island data. The most valuable fisheries in Barnegat Light/Long Beach in 2006 were sea scallops (over \$18 million), monkfish (nearly \$3 million), and swordfish (listed in the “Other” category), according to NMFS landings data (see Table 1). Scallop landings were above the 10-year average in 2006. Tilefish was also an important species in 2006, with a significant increase in value from the 1997-2006 average. Overall, the value of the catch, both that of vessels with their homeport in Barnegat Light and those landing their catch here, increased over the 10-yr period (1997-2006; see Table 2). The number of vessels both home ported in Barnegat Light and whose owner’s city was Barnegat Light also increased over the same period.

Landings by Species

Table 1. Dollar value of Federally Managed Groups of landings in Barnegat Light/Long Beach

	Average from 1997-2006	2006 only
Scallop	9,531,153	18,867,447
Monkfish	3,343,334	2,861,690
Other¹³	2,534,483	2,167,254
Tilefish	448,777	CONFIDENTIAL
Bluefish	268,275	211,161
Dogfish	157,643	0
Skate	107,722	60,980
Summer Flounder, Scup, Black Sea Bass	79,292	202,918
Squid, Mackerel, Butterfish	53,644	5,501
Largemesh Groundfish¹⁴	3,820	1,206
Smallmesh Groundfish¹⁵	1,514	44
Lobster	861	0
Herring	620	4,365

¹² Community Review Comments, Greg DiDomenico, Garden State Seafood Association, 212 West State Street, Trenton, NJ, 08608, August 24, 2007

¹³ “Other” species includes any species not accounted for in a federally managed group

¹⁴ Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

¹⁵ Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

Vessels by Year¹⁶

Table 2. All columns represent vessel permits or landings value combined between 1997-2006

Barnegat Light (Year)	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port (\$)	Level of fishing landed port (\$)
1997	43	28	6,144,679	10,303,886
1998	38	27	6,054,709	10,171,814
1999	54	32	11,127,349	12,119,138
2000	65	38	14,417,637	14,594,799
2001	71	39	14,709,246	14,387,998
2002	72	38	14,657,863	14,568,116
2003	81	39	16,623,969	16,381,772
2004	79	38	20,657,786	20,560,559
2005	80	42	26,601,829	26,725,708
2006	78	42	24,203,962	25,497,592

Vessels home ported = No. of permitted vessels with location as homeport

Vessels (owner's city) = No. of permitted vessels with location as owner residence¹⁷

Level of fishing home port (\$) = Landed value of fisheries associated with home ported vessels

Level of fishing landed port (\$) = Landed value of fisheries landed in location

Recreational

In New Jersey the charter/party fleet is the largest on east coast. Many vessels are over 120ft long and carry over 150 people.¹⁸ Just a glance at the large number of marinas, charter operations, bait and tackle shops, and boat ramps on Long Beach Island makes it clear that recreational fishing is important here (see above). Between 2001- 2005, there were 40 charter and party vessels making 7,189 total trips registered in logbook data by charter and party vessels in Long Beach carrying a total of 172,212 anglers (NMFS VTR data). To further highlight the importance of the recreational fishing sector, at the request of the Ocean County government, the Beach Haven Charter Fishing Association estimated the total economic impact of the Associations member vessels. Values were estimated to exceed \$3 million per year for the community.¹⁹

[Hot Tuna Charters](#) is one charter boat in Long Beach that specifically targets tuna, and offers both inshore and canyon fishing. [Jersey Girl Sport Fishing](#) is another charter company with both inshore trolling and wreck fishing for tuna, skipjack, mahi mahi, seabass, croaker, fluke, porgies, and more. The [Beach Haven Charter Fishing Association](#) represents several different boats in Beach Haven and Long Beach. Many recreational and charter fishing boats can be found in Barnegat Light, along with marinas, boat rental facilities, and bait and tackle shops (Barnegat Light nd).

Subsistence

Information on subsistence fishing in Barnegat Light/Long Beach is either unavailable through secondary data collection or the practice does not exist.

¹⁶ Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

¹⁷ The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

¹⁸ Community Review Comments, Bruce Freeman, NJ Coast Anglers Association, 1201 Route 37 East, Suite 9, Toms River, NJ 08753, October 2, 2007

¹⁹ Community Review Comments, Capt. Lindsay Fuller, Treasurer, Beach Haven Charter Fishing Association, September 25, 2007

FUTURE

As of 2005 the New Jersey State Department of Transportation had plans to build a second bridge alongside the existing one to Long Beach Island, to address the poor structural conditions of the existing bridge. This would not affect the amount of traffic able to travel to the island (Larsen 2005). Also as of 2005, if the necessary easements are signed by property owners on the island, the Army Corps of Engineering will soon begin a \$75 million beach renourishment project expected to last 50 years (Zedalis 2005). Information has not yet been obtained regarding people's perception of the future in Long Beach.

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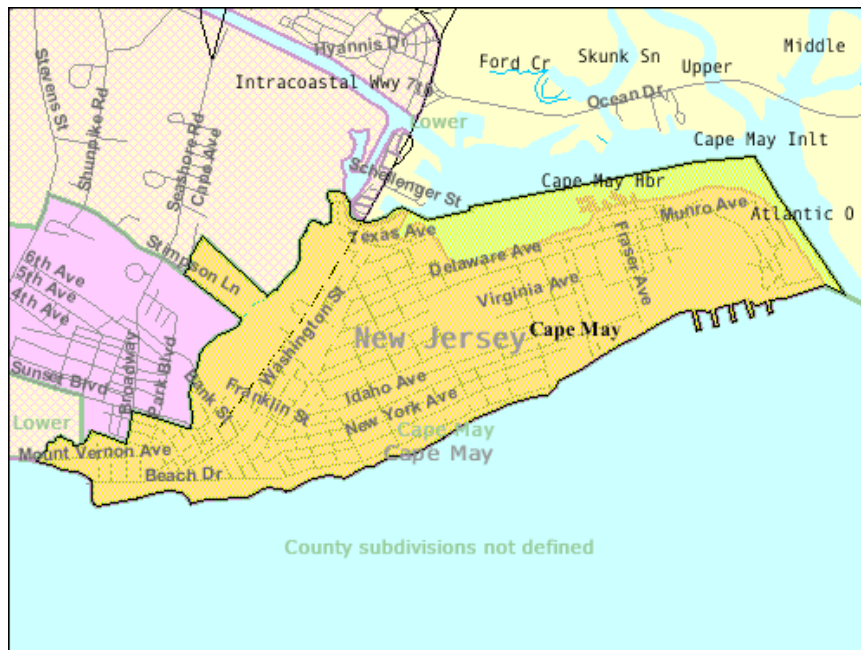
CAPE MAY, NJ¹

Community Profile²

PEOPLE AND PLACES

Regional orientation

The city of Cape May, New Jersey (38.94°N, 74.91°W), is located in Cape May County (see Map 1). It is at the southern tip of the state of New Jersey on Cape Island at the end of Cape May Peninsula, with the Atlantic Ocean to the east and Delaware Bay to the west (USGS 2008).



Map 1. Location of Cape May, NJ (US Census Bureau 2000a)

Historical/Background

Cape May is part of Cape Island at the southern tip of Cape May Peninsula. The island was artificially created in 1942 when the U.S. Army Corps of Engineers dredged a canal that passes through to the Delaware Bay (City of Cape May nd). Fishing and farming have been important in this area since its beginnings, and whaling, introduced by the Dutch, was a significant industry in Cape May for roughly a century beginning in the mid-1600s. In the 18th century, this area became a summer resort for wealthy residents of Philadelphia wishing to escape the crowded city during the summer months, and is known as “America’s oldest seaside resort.” Because of this history and because of a fire that destroyed much of the city in 1878, Cape May has numerous Victorian homes and hotels, and was declared a National Historic Landmark City in 1976 (Cape Publishing 2005). “Today commercial fishing is still the backbone of the county and is the second largest industry in Cape May

¹ These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

² For purposes of citation please use the following template: “Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov.”

County. The port of Cape May is considered one of the largest and busiest seaports along the eastern seaboard and generates more than \$500 million annually”(Cape May County nd).

Demographics³

According to the Census 2000 data⁴, Cape May had a total population of 4,034, down from a reported population of 4,668 in 1990 (US Census Bureau 1990). Of this total in 2000, 49.3% were males and 50.7% were females. The median age was 47.4 years and 77.7% of the population was 21 years or older while 32.4% were 62 or older.

Cape May’s population structure by age group (see Figure 1) was similar for all age categories. However, men were dominant for the population between 0 and 29 years, and then the population for male and female was the same until age 40 when it switched to female dominance through 80 years and over. Further, unlike the U.S. as a whole, the middle years are overall in lower percentages than the youngest and oldest. This large number of males in the 20-29 age bracket followed by a drop in the ages 30-59 is also very unlike most other fishing communities.

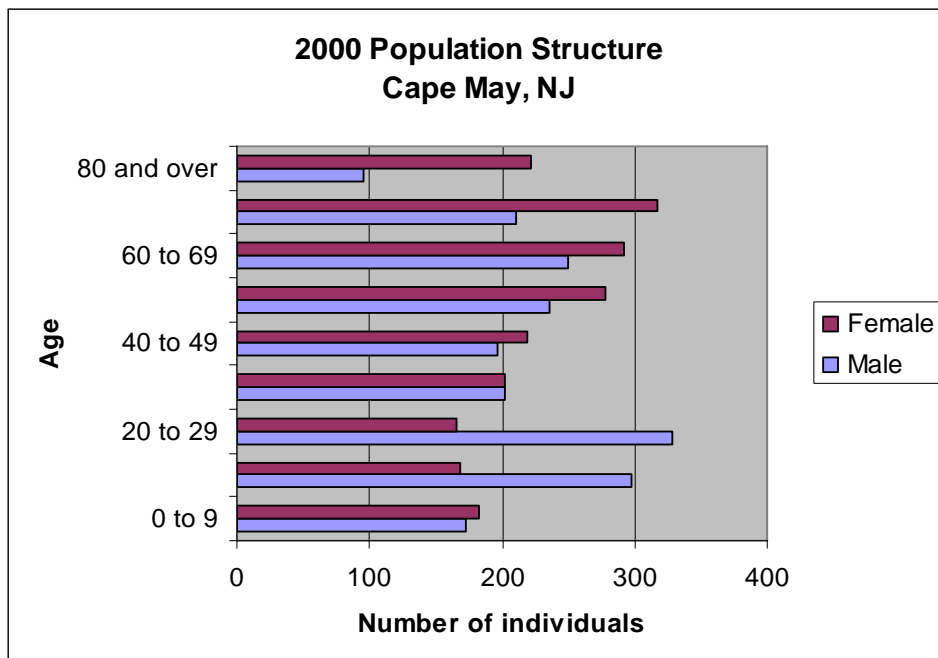


Figure 1. Cape May’s population structure by sex in 2000 (US Census Bureau 2000a)

The vast majority of the population of Cape May in 2000 was white (91.0%), with 5.9% black or African American, 0.6% Native American or Alaskan, 0.8% Asian, and 0.07% Pacific Islander or Hawaiian (see Figure 2). Only 3.8% of the population identified themselves as Hispanic/Latino (see Figure 3). Residents linked their heritage to a number of European ancestries including: Irish (26.9%), German (21.9%), English (16.2%), Italian (14.2%), Polish (6.9%), French (3.5%), and Scottish (2.7%). With regard to region of birth, 25.6% of residents were born in New Jersey, 66.9% were born in a different state, and 6.1% were born outside the U.S. (including 2.4% who were not United States citizens).

³ While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

⁴ These and all census data, unless otherwise referenced, can be found at <http://factfinder.census.gov/home/saff/main.html>; census data used are for Cape May city

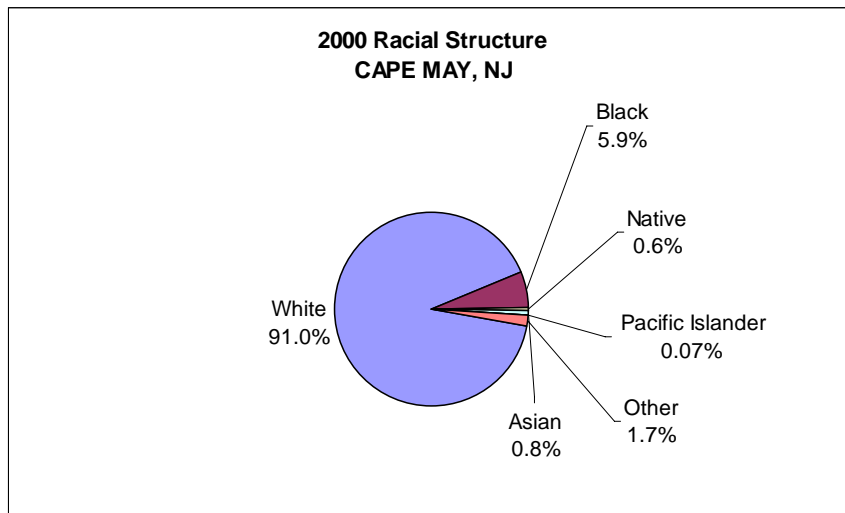


Figure 2. Racial Structure in 2000 (US Census Bureau 2000a)

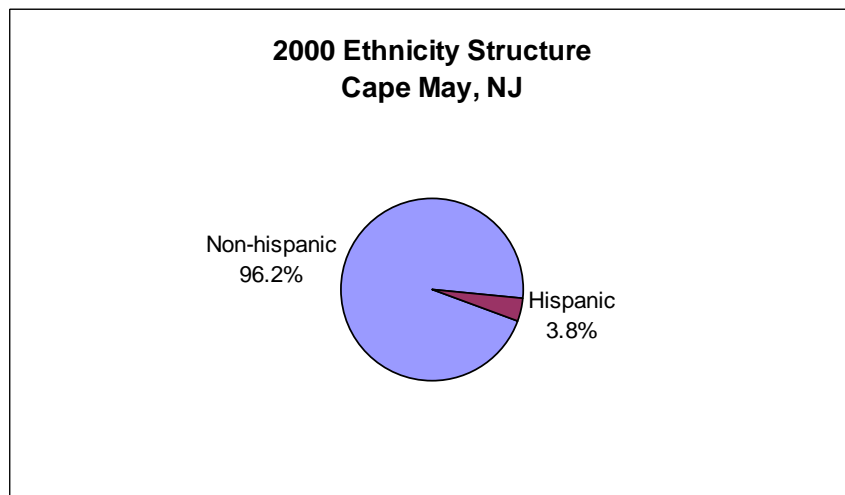


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 91.1% of the population in 2000, only English was spoken in the home, leaving 8.9% in homes where a language other than English was spoken, including 2.9% of the population who spoke English less than “very well” according to the US Census Bureau.

Of the population 25 years and over, 87.6% were high school graduates or higher and 30.8% had a bachelor’s degree or higher. Again of the population 25 years and over, 2.6% did not reach ninth grade, 9.8% attended some high school but did not graduate, 30.5% completed high school, 20.1% had some college with no degree, 6.2% received an associate’s degree, 19.0% earned a bachelor’s degree, and 11.8% received a graduate or professional degree.

Although religious percentages are not available through U.S. Census data, according to the Association of Religion Data Archive in 2000 the religion with the highest number of congregations in Cape May County was Catholic, with 15 congregations and 32,307 adherents. Other prominent congregations were United Methodist (25 with 5,133 adherents), Episcopal (6 with 1,588 adherents) and Evangelical Lutheran Church in America (6 with 2,142 adherents). The total number of adherents to any religion was up 15% from 1990 (ARDA 2000).

Issues/Processes

Offshore wind farms have been proposed for four locations off of Cape May County, and fishermen are concerned about the impact wind turbines could potentially have on the fish or on their access to the fisheries (AP 2005). In 2006, rising fuel costs were having a detrimental effect on the charter fishing industry, especially on those boats going further out to go canyon fishing. The boat owners have been forced to raise their prices, and many potential customers were thinking twice about taking a trip offshore (McCann 2006).

Like in many other fishing communities with a significant tourism industry, commercial fishermen in Cape May are often competing with recreational fishing and with residential development for space. Lower Township, the municipality where the fishing industry is based, currently has three “marine development” zones in place, which are mostly used by recreational businesses; Schellenger’s Landing, where much of the commercial fishing industry is based, is specially zoned for “marine general business” to permit expansion of the fishing-related businesses located here (McCay and Cieri 2000).

Cultural attributes

The Lobster House dock and fish packing plant operates a 45-minute tour to teach visitors about Cape May’s commercial fishing industry (CMCDT nd). The Cape May County Fishing Tournament is one of the longest continuously running fishing tournaments on the East Coast (Cape May County nd). Cape May has a fisherman’s memorial, with a woman and child looking out to sea, which was created thanks to a now defunct fishermen’s wives association (McCay and Cieri 2000). Cape May County holds an annual seafood festival each July (Cape May Lewes nd); the commercial fishing industry reportedly has little involvement in the festival (McCay and Cieri 2000). A significant seafood festival is being organized (August 2007) to promote Cape May seafood as well as preparing for the Annual Seafood Cook-off held in New Orleans, LA. The Garden State Seafood Association is helping to coordinate this event along with many local restaurants and other groups throughout the state.⁵

INFRASTRUCTURE

Current Economy

“Like many Jersey Shore communities, much of Cape May's and Wildwood's economies are dependent on seasonal tourism - which is dependent both on the weather and the overall state of the economy. The year-round character of commercial fishing is a major factor in keeping these communities going in the off-season” (CMCPCBA nd). Commercial fishing is the second largest industry in Cape May County after tourism (CMCDT nd). The tenth largest employer (140 employees) in Cape May County is [Snow’s/Doxsee Inc.](#) (NJDA nd; CMCCC nd), with an 86,000 square-foot plant in Cape May that produces clam products including chowder, soups, canned clams, clam juice, and seafood sauces. Cold Spring Fish and Supply employs 500 people, and is the third largest employer in the county. Other top employers in the county include Burdette Tomlin Memorial Hospital (now the Cape Regional Medical Center) (1100), Acme Markets (600), WaWa (485), Holy Redeemer Visiting Nurse (250), and Super Fresh (250) (CMCCC nd). Cape May also has the only basic training facility for the U.S. Coast Guard (USMilitary.com 2007).

According to the U.S. Census 2000, 57.5% (1,985 individuals) of the total population over 16 years of age and over was in the labor force (Figure 4), of which 3.8% were unemployed, 14.2% were in the armed forces, and 39.5% were employed.

⁵ Community Review Comments, Greg DiDomenico, Garden State Seafood Association, 212 West State Street, Trenton, NJ, 08608, August 24, 2007

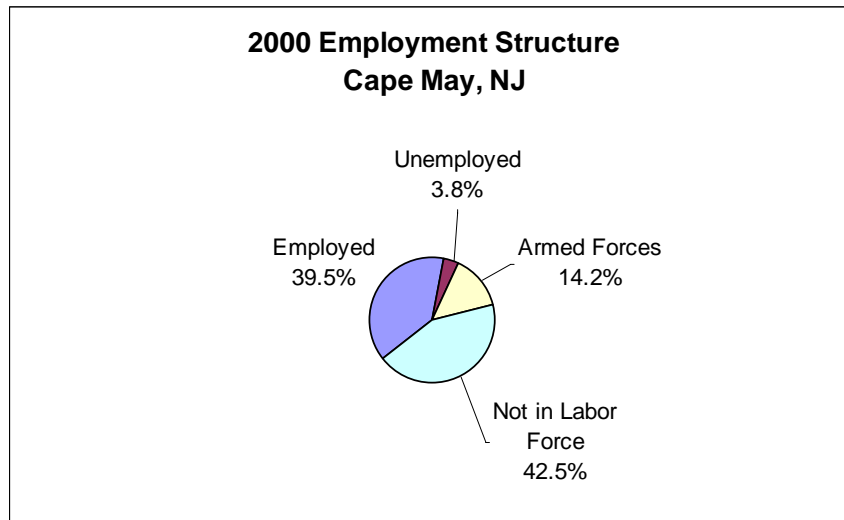


Figure 4. Employment Structure in 2000 (US Census Bureau 2000a)

According to the U.S. Census 2000⁶, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 5 positions or 0.4% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 205 positions or 15% of jobs. Arts, entertainment, recreation, accommodation and food services (21.1%), retail trade (16.4%), and educational, health and social services (13.6%), and finance, insurance, real estate and rental and leasing (10.6%) were the primary industries.

Median household income in Cape May in 2000 was \$33,462 (up 21.4% from \$27,560 in 1990 [US Census Bureau 1990]) and median per capita income was \$29,902. For full-time year round workers, males made approximately 13.0% more per year than females.

The average family in Cape May in 2000 consisted of 2.69 persons. With respect to poverty, 7.7% of families (up from 2.7% in 1990 [US Census Bureau 1990]) and 9.1% of individuals were below the U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 36.7% of all families in Cape May (of any size) earned less than \$35,000 per year.

In 2000, Cape May had a total of 4,064 housing units, of which 44.8% were occupied and 40.8% were detached one unit homes. Fewer than a third (29.1%) of these homes were built before 1940. Mobile homes and boats accounted for only 0.3% of the total housing units; 82.3% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$212,900. Of vacant housing units, 93.1% were used for seasonal, recreational, or occasional use. Of occupied units, 43.2% were renter occupied.

Government

The City of Cape May operates under the Council/Manager form of government. Cape May voters directly elect the Mayor. The person elected serves a four year term. The mayor presides over the council and has a vote. There are four members of Council, in addition to the Mayor. Their terms are staggered, where the members of the first council draw lots to determine who serves a four year term. The remaining three will serve a two year term. Subsequently, all councilmen elected serve for four years (City of Cape May nd).

⁶ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

Fishery involvement in government

The Cape May County Planning Board expresses in its comprehensive plan its policies regarding commercial fishing, which include promoting and encouraging land use policies which benefit the commercial fishing industry and protecting the fishing industry from economic or environmental harm by opposing projects which may have a negative effect (Cape May County nd).

NOAA Fisheries Statistics Office has port agents based in Cape May. Port agents sample fish landings and provide a ‘finger-on-the-pulse’ of their respective fishing communities (NOAA FSO nd).

Institutional

Fishing associations

[Garden State Seafood Association](#) (GSSA) in Trenton is a statewide organization of commercial fishermen and fishing companies, related businesses and individuals working in common cause to promote the interests of the commercial fishing industry and seafood consumers in New Jersey. Lunds, Atlantic Capes, and Cold Spring are all members of the GSSA. Lunds and Atlantic Capes are founding contributors of the National Fisheries Institute, Scientific Monitoring Committee, which raises millions of dollars through the Research Set-Aside Program. Rutgers University is a major contributor to these science-based efforts and has an office in Cape May.⁷

The [Jersey Coast Anglers Association](#) (JCAA) is an association of over 75 saltwater fishing clubs throughout the state. Founded in 1981, the purpose of the organization is to unite and represent marine sport anglers to work towards common goals. The JCAA website (www.jcaa.org) also provides links for many NJ anglers associations.

Fishery assistance centers

The Cape May County government, along with the State of New Jersey, developed the Cape May County Revolving Fishing Loan Program. Instituted in 1984, it is designed “to help commercial, charter and party boat fishermen with low interest loans for safety and maintenance of fishing vessels.” More than \$2.5 million has been loaned to date (Cape May County nd). The Cape May County Technical School integrates projects such as commercial fishing net mending and gear construction and operating a fish market in their curriculum to prepare students for careers in the commercial fishing industry (CMCTSD nd).

Other fishing related organizations

The [Cape May County Party and Charter Boat](#) Association is an organization of small recreational fishing boats located along the coast of Southern New Jersey. The [Cape May Marlin & Tuna Club](#) hosts several tournaments throughout the year.

Physical

Cape May, like all of New Jersey's seafood industry, is within easy reach of airports in Newark, New York and Philadelphia. All these offer next-day service for fresh seafood to virtually every major market in the world. The container port in Newark/Elizabeth handles hundreds of thousands of shipping containers each month, many of them packed with chilled or frozen food products (NJ Fishing nd). Cape May also has extensive bus service to the surrounding area as well as Philadelphia and Atlantic City (NJ Transit nd). There is also a [ferry terminal](#) connecting Cape May to Lewes, DE. It is 48 miles from Atlantic City, NJ, 87 miles from Philadelphia, PA, and 169 miles from New York City.

⁷ Community Review Comments, Greg DiDomenico, Garden State Seafood Association, 212 West State Street, Trenton, NJ, 08608, August 24, 2007

Commercial and recreational fishing docks are scattered around Cape May or, more properly, Lower Township, but centered in an area known as Ocean Drive (McCay and Cieri 2000), “a road which leaves the main highway and crosses the marshes toward the Diamond Beach section of Lower Township and Wildwood Crest, and Schellenger's Landing, just over a large bridge that connects the mainland with the center of Cape May and its beaches.”⁸ The fishing industry is really based in Lower Township, rather than within Cape May proper. Schellenger's Landing has a dock and fish market; a number of large vessels are located here. In the vicinity are also a marine railway, two marinas, two bait and tackle shops, two marine suppliers, and a “marlin and tuna club”. Some commercial fishing boats also use Cape May's recreational marinas (McCay and Cieri 2000). [Two Mile Landing](#) is a marina with recreational boats and a restaurant; some commercial fishing activity is found here as well (McCay and Cieri 2000).

INVOLVEMENT IN NORTHEAST FISHERIES⁹

Commercial

The combined port of Cape May/Wildwood is the largest commercial fishing port in New Jersey and is one of the largest on the East Coast. Cape May/Wildwood is the center of fish processing and freezing in New Jersey. Some of the largest vessels fishing on the East Coast are home ported here. Cape May fishing vessels have frequently been responsible for developing new fisheries and new domestic and international markets. The targeted species are diverse; fisheries focus on squid, mackerel, fluke, sea bass, porgies, lobsters and menhaden. Some of the boats out of Wildwood are also targeting surf clams and ocean quahogs (NJ Fishing nd).

[F.H. Snow's Canning Co/Doxsee](#) is a large clam cannery based in Lower Township (not Cape May)¹⁰, and the only domestic manufacturer to harvest its own clams. Snow's/Doxsee has the nation's largest allocation for fishing and harvesting ocean clams. Established in 1954 in Cape May, [Lund's Fisheries, Inc.](#), is a freezer plant and a primary producer of various species of fish found along the Eastern Seaboard of the USA. It is also a member of the [Garden State Seafood Association](#). There is one other exporter of seafood in Lower Township¹¹, the Atlantic Cape Fisheries Inc. which exports marine fish and shellfish, oysters, scallops, clams and squids (NJDA nd). The Axelsson and Johnson Fish Company Inc. which used to export shad, marine fish, conch, American lobster, lobster tails, scallops and whole squid went out of business several years before the creation of this profile.¹²

The top species landed in Cape May in 2006 were scallops (over \$23 million), squid, mackerel, butterfish (over \$12 million) and summer flounder, scup, and black sea bass (over \$1.9 million) (Table 1). Between 1997 and 2006 home ported vessels increased from 109 to 184 while the number of vessels whose owner's city was Cape May also increased from 73 to

⁸ Community Reviewer Comments, James Smith, Cape May County Planning. Comments received September 12, 2007.

⁹ In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

¹⁰ Community Reviewer Comments, James Smith, Cape May County Planning. Comments received September 12, 2007.

¹¹ Community Reviewer Comments, James Smith, Cape May County Planning. Comments received September 12, 2007.

¹² Community Review Comments, Walter Makowski, NMFS Port Agent, August 8, 2007

88 vessels. Additionally, home port value and landed port value also steadily increased over the same time period, with the exception of a decline in the later category in 2006 (Table 2).

Landings by Species

Table 1. Dollar value of Federally Managed Groups of Landings for Cape May

	Average from 1997-2006	2006 only
Scallop	22,263,937	23,677,160
Squid, Mackerel, Butterfish	7,584,550	12,375,958
Summer Flounder, Scup, Black Sea Bass	2,044,420	1,979,899
Other ¹³	1,696,617	1,637,321
Surf Clams, Ocean Quahog	588,296	0
Lobster	420,312	8,861
Herring	412,103	2,896,122
Monkfish	322,895	397,841
Red Crab	40,358	0
Smallmesh Groundfish ¹⁴	23,939	2,997
Bluefish	20,626	4,267
Skate	12,299	4,387
Largemesh Groundfish ¹⁵	8,067	3,705
Dogfish	6,574	0
Tilefish	597	1,230

Vessels by Year¹⁶

Table 1. All columns represent vessel permits or landings value combined between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port (\$)	Level of fishing landed port (\$)
1997	109	73	27,687,667	23,636,983
1998	105	68	27,614,763	25,770,007
1999	106	72	29,153,706	22,353,284
2000	116	74	30,488,271	23,936,235
2001	116	71	32,923,798	27,155,864
2002	118	72	34,529,920	28,312,296
2003	129	78	42,777,501	36,372,658
2004	135	73	62,308,441	60,630,752
2005	155	82	69,641,897	63,298,068
2006	184	88	75,058,370	42,989,748

Vessels home ported = No. of permitted vessels with location as homeport

Vessels (owner's city) = No. of permitted vessels with location as owner residence¹⁷

Level of fishing home port (\$) = Landed value of fisheries associated with home ported vessels

Level of fishing landed port (\$) = Landed value of fisheries landed in location

Recreational

In NJ the charter/party fleet is the largest on east coast. Many vessels are over 120ft long and carry over 150 people.¹⁸ The Cape May County Party and Charter Boat Association lists several dozen charter and party vessels based out of the City of Cape May. There are 35

¹³ "Other" species includes any species not accounted for in a federally managed group

¹⁴ Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

¹⁵ Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

¹⁶ Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

¹⁷ The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

¹⁸ Community Review Comments, Bruce Freeman, NJ Coast Anglers Association, 1201 Route 37 East, Suite 9, Toms River, NJ 08753, October 2, 2007

vessels listed carrying 1-6 passengers, six vessels which can carry more than six passengers, and three party boats (NJ Fishing nd). The [Miss Chris](#) fleet of party boats makes both full- and half-day trips, targeting largely fluke and stripers for most of the year. The [Porgy IV](#), another party boat, targets sea bass, blackfish, and flounder. Many of the charter boats go offshore canyon fishing (McCay and Cieri 2000). Between 2001- 2005, there were 56 charter and party vessels making 6,599 total trips registered in NMFS logbook data by charter and party vessels in Cape May, carrying a total of 116,917 anglers (NMFS VTR data). There are several fishing tournaments held throughout the year sponsored by the [Cape May Marlin and Tuna Club](#).

Subsistence

Information on subsistence fishing in Cape May is either available through primary data collection or the practice does not exist.

FUTURE

Information on the future in Cape May was unavailable through secondary data collection.

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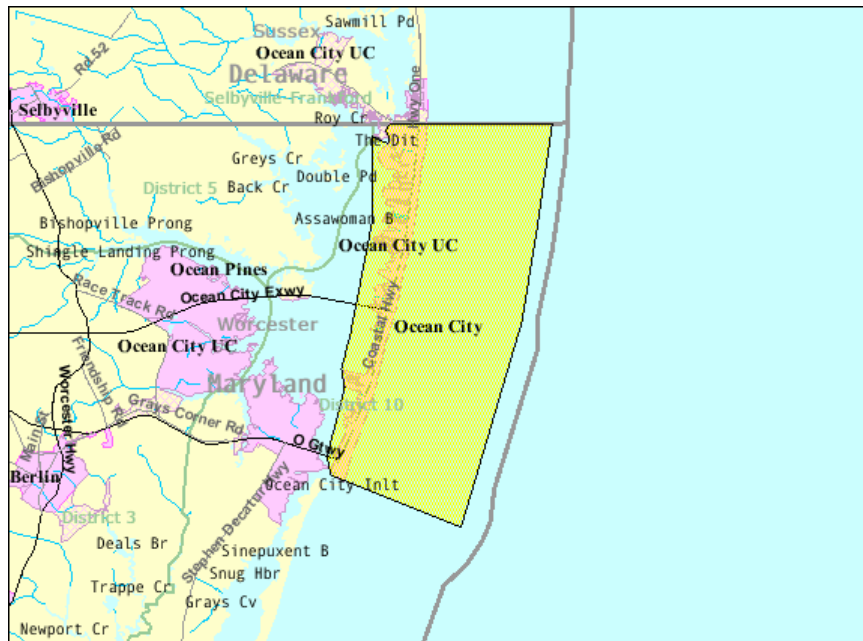
OCEAN CITY, MD¹

Community Profile²

PEOPLE AND PLACES

Regional orientation

Ocean City, Maryland (38.33° N, 75.09° W) is a town located in Worcester County, in Ocean Pines, an unincorporated area in the County. It is bordered to the east by the Atlantic Ocean and to the west by the Assawoman Bay and Isle of Wight Bays. The town has a total area of 36.4 mi², 4.6 mi² of that is land and 31.8 mi² is water (USGS 2008). West Ocean City is across the bay from the southern portion of Ocean City.



Map 1. Location of Ocean City, MD (US Census Bureau 2000a)

Historical/Background

The first European came to Ocean City in 1524 from France, but the town wasn't truly settled until the late 17th century with an influx of Virginians from the Eastern Shore. The area of land belonging today to Worcester county Maryland changed many times over the years, belonging at times to Delaware and Somerset County, Maryland. In 1869, a man named Isaac Coffin came to Ocean City and built a cottage to house guests who wanted to go to the beach or to fish. People quickly came and the area became a popular summer resort, eventually adding dancing and amusements. In 1933, a storm formed the Ocean City Inlet and engineers decided to make this act of nature permanent. This decision helped to establish Ocean City as an important

¹ These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

² For purposes of citation please use the following template: "Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov."

fishing port, offering easy access to both the bay and the Atlantic Ocean (OCCVB n.d.). Most of the fishing today is offshore, however there are substantial inshore and coastal bay fisheries (blue crabs, hard clams, and gillnetting for spot, bunker, trout, and striped bass).³ West Ocean City, while on the other side of the bay and not part of the town, is generally not considered by locals to be a distinct entity from Ocean City.⁴

Demographics⁵

Ocean City – According to the Census 2000 data, Ocean City town had a population of 7,173, up 41.4% from a reported population of 5,074 in 1990 (US Census Bureau 1990). Of this 2000 total, 51.3% were males and 48.7% were females. The median age was 47.2 years and 86.5% of the population was 21 years or older while 30.0% of the population was 62 or older.

The population structure for Ocean City (see Figure 1) showed an older population, with the largest percentage of residents between the ages 60-69, and significant numbers of residents in the 50-59 and 70-79 age categories. This indicates that many people may retire to Ocean City. There were also, however, a significant number of residents between the ages of 20-49 as well. Ocean City had surprisingly few children in the 0-9 and 10-19 age categories.

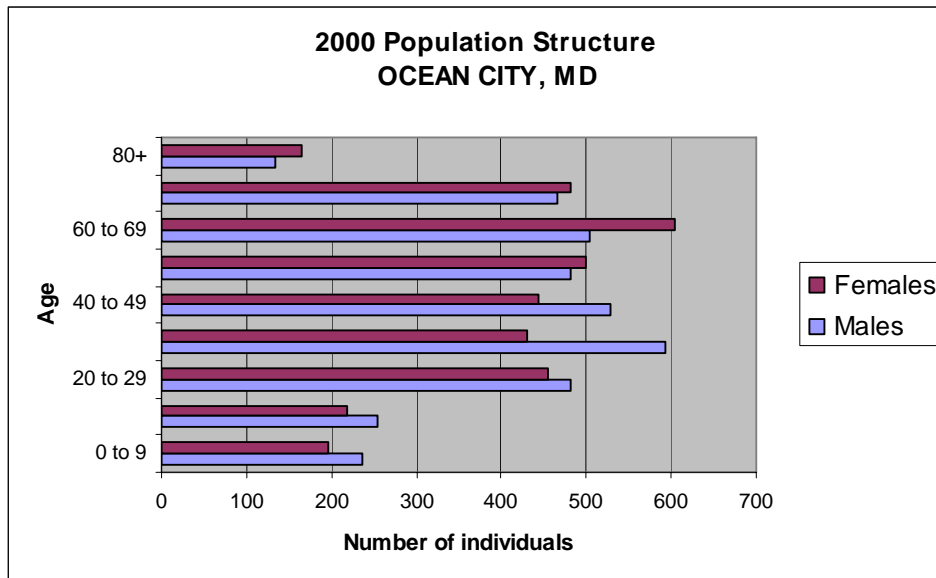


Figure 1. Ocean City's population structure by sex in 2000 (US Census Bureau 2000)

The majority of the population was white (96.3%) with 2.5% black or African America, 0.7% Asian, 0.1% Native American, and 0.01% Native Hawaiian or Pacific Islander (see Figure 2). Of the total population, 1.2% identified themselves as Hispanic/Latino (see Figure 3). Residents linked their backgrounds to a number of different ancestries including: German (25.6%), Irish (21.0%), English (16.0%), and Italian (8.7%).

³ Community Review comments, Dave Blazer, Executive Director, Maryland Coastal Bays, 9199 Stephen Decatur Highway, Suite 4, Ocean City, MD 21842, October 12, 2007

⁴ Personal communication, Vincent Malkoski, Division of Marine Fisheries, 1213 Purchase Street New Bedford, MA 02740.

⁵ While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

With regard to region of birth, 51.5% were born in Maryland, 43.7% were born in a different state and 4.5% were born outside of the U.S. (including 3.0% who were not United States citizens).

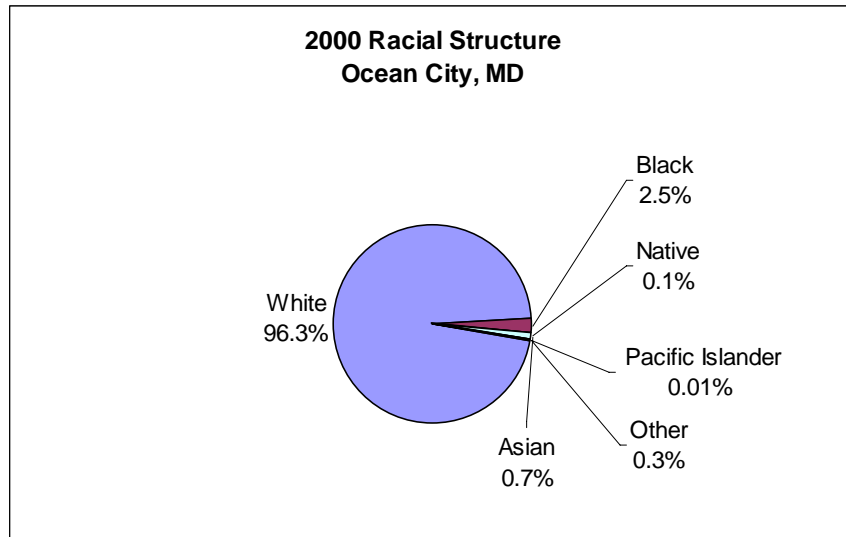


Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

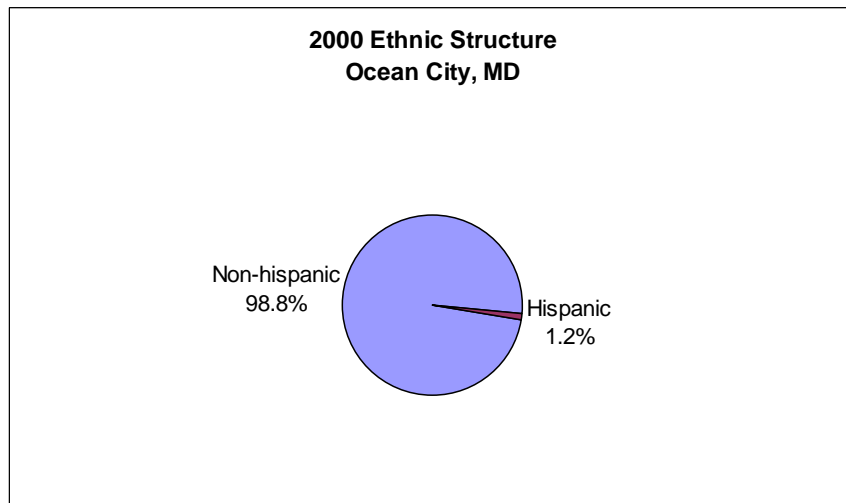


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 93.0% of the population in 2000, only English was spoken in the home, leaving 7.0% in homes where a language other than English was spoken, including 2.9% of the population who spoke English less than “very well” according to the 2000 Census.

Of the population 25 years and over, 87.1% were high school graduates or higher and 28.0% had a bachelor’s degree or higher. Again of the population 25 years and over, 2.6% did not reach ninth grade, 10.3% attended some high school but did not graduate, 31.7% completed high school, 22.7% had some college with no degree, 4.8% received their associate’s degree, 20.1% earned their bachelor’s degree, and 7.9% received either their graduate or professional degree.

West Ocean City CDP – According to the Census 2000 data, West Ocean City CDP had a population of 3,311, up 65.5% from a reported population of 2,000 in 1990 (US Census Bureau 1990). Of this total in 2000, 49.3% were males and 50.7% were females. The median age was 43.5 years and 77.9% of the population was 21 years or older while 23.3% of the population was 62 or older.

The population structure for West Ocean City (see Figure 4) showed essentially two peaks; the first was between ages 30-39, and the second between ages 60-69. Interestingly, men between the ages of 30-39 outnumbered women of the same age, and conversely women aged 60-69 out-numbered their male counterparts. This patterns suggests two possible trends; one is that younger adults, and particularly males without children aged 20-39 are moving to West Ocean City, and the other is that many people are retiring here, judging by the large number of residents in the 60-69 and 70-79 age categories. There were not many children in West Ocean City, compared to what one might expect to see considering the number of residents here.

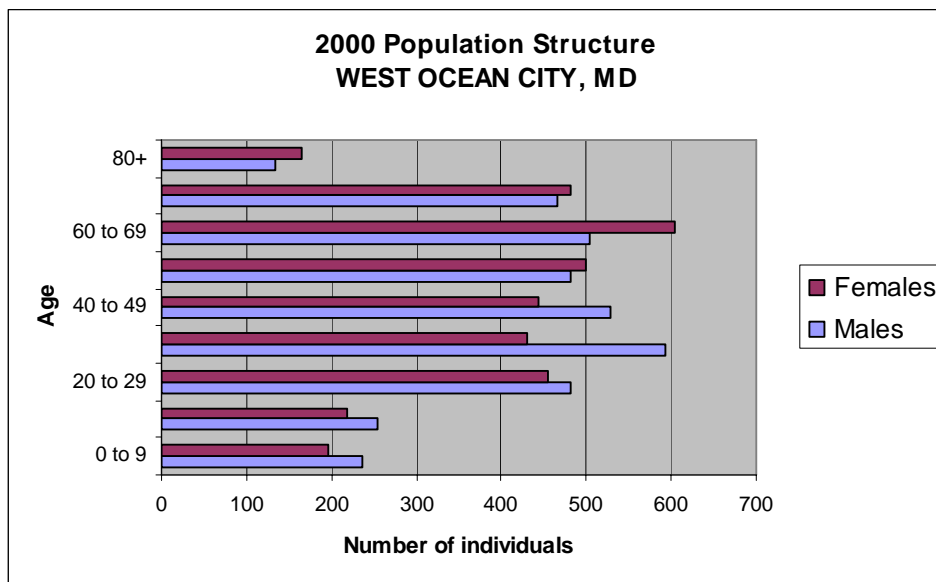


Figure 4. Ocean City's population structure by sex in 2000

The majority of the population of West Ocean City in 2000 was white (95.9%) with 2.0% of residents black or African American, 0.8% Native American, 1.0% Asian, and 0.1% Pacific Islander or Hawaiian (see Figure 5). Of the total population, only 1.4% identified themselves as Hispanic/Latino (see Figure 6). Residents linked their backgrounds to a number of different ancestries including: German (22.1%), English (19.0%), and Irish (16.7%).

With regard to region of birth, 57.2% were born in Maryland, 38.2% were born in a different state and 4.4% were born outside of the U.S. (including 2.2% who were not United States citizens).

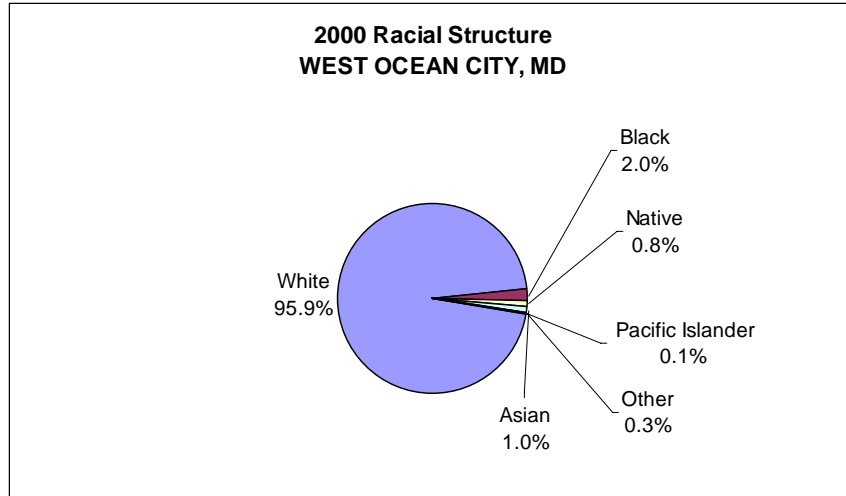


Figure 5. Racial Structure in 2000 (US Census Bureau 2000)

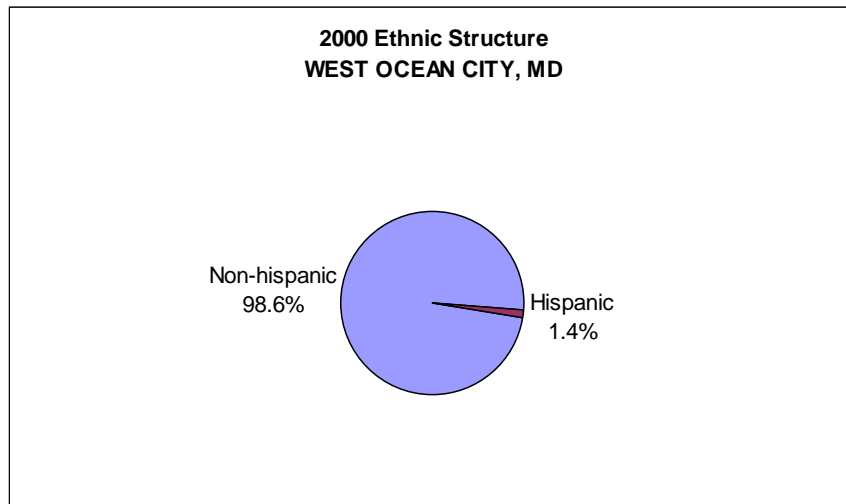


Figure 6. Ethnic Structure in 2000 (US Census Bureau 2000)

For 93.2% of the population, only English was spoken in the home, leaving 6.8% in homes where a language other than English was spoken, including 2.8% of the population who spoke English less than “very well” according to 2000 Census.

Of the population 25 years and over, 81.2% were high school graduates or higher and 20.7% had a bachelor’s degree or higher. Again of the population 25 years and over, 3.6% did not reach ninth grade, 15.2% attended some high school but did not graduate, 31.5% completed high school, 21.1% had some college with no degree, 7.9% received their associate’s degree, 12.6% earned their bachelor’s degree, and 8.1% received either their graduate or professional degree.

Although religious percentages are not available through U.S. Census data, according to the Association of Religion Data Archives (ARDA) in 2000, the religions with the highest number of congregations in Worcester County included Catholic with 5 congregations and 7,700 adherents. Other prominent congregations in the county were United Methodist (39 with 7,628 adherents) and Southern Baptist Convention (8 with 3,009 adherents). The total number of adherents to any religion was up 59.6% from 1990 (ARDA 2000).

Issues and Processes

Ocean City is primarily a resort town. The real estate market has long been a problem for those seeking to buy a first home, especially blue collar workers (Lerner 2002, Guy 2003, Vandiver 2004). Many people are also concerned about aquaculture developing in the area. They are concerned that if it does develop, it will be run by the large poultry companies in the area, as has happened in areas further to the south (McCay and Cieri 2000:90). Also a concern with respect to aquaculture is competition for space and resources. Concerns are also present regarding allocation of marine resources between the commercial and recreational sectors, as well as potential commercial fishing gear impacts on habitat in the area.⁶

Dock space in West Ocean City, where the commercial fishing fleet is based, is limited; fortunately protective zoning by Worcester County means the docks are not immediately threatened. Some processing plants and a clam dock in the area recently closed as a result of a consolidation of surf clam and ocean quahog boats, particularly a decline in owner-operated boats, after the implementation of ITQs in this fishery (Oles 2003).

Cultural attributes

Ocean City hosts many fishing tournaments each year. In 2006, the tournaments began in June with the Mako Mania Shark Tournament. In July comes the Ocean City Tuna Tournament, which features nightly weigh-ins as well as food, entertainment, crafts and fishing related games for children. In August, the town hosts the world's largest billfish tournament, the White Marlin Open, which offers cash prizes for white marlin, blue marlin, tuna, wahoo, dolphin and shark; nightly weigh-ins are a popular event. In 2006, \$2.3 million was given away in prizes. Later in the month is the only local Ladies Only fishing tournament, Captain Steve Harman Poor Girl's Open Fishing Tournament. In September the Mid-Atlantic Bartenders Open Fishing Tournament is another popular event (Ocean City 2008). Other tournaments are held as well, many hosted by [The Ocean City Marlin Club](#).

Each year the [Maryland Watermen's Association](#) sponsors the East Coast Commercial Fishermen's and Aquaculture Trade Exposition in Ocean City, which features aquaculture and commercial fishing seminars, gear, equipment, and boats. The Seaside Boat Show is held in February. May brings the Annual White Marlin Festival and Crab Soup Cookoff (Town of Ocean City 2008). One of the fish docks in West Ocean City sponsored a "Mid-Atlantic Commercial Fishing Skills Contest", which included competitions in rope tying, net mending, rope splicing, survival suit-donning, and other fishing-related activities (Oles 2003). January brings the Nautical and Wildlife Art Festival and October brings Harbor Day at the Docks ~ a Waterfront Heritage Festival and Phillips Annual Seafood Dinner (OCCVB nd).

INFRASTRUCTURE

Current Economy

Many of the people in the Ocean City area work in restaurants and hotels that have made this area popular with tourists. In fact, the six major employers in Ocean City are all in tourism and property management/development industries: Harrison Group (hotels), Phillips

⁶ Community Review comments, Dave Blazer, Executive Director, Maryland Coastal Bays, 9199 Stephen Decatur Highway, Suite 4, Ocean City, MD 21842, October 12, 2007

(restaurants/seafood), Bayshore Development (hotels, amusements), OC Seacrets, Inc. (night club), KTG LLC (restaurants), and Clarion Resort Fountainbleu (hotels).⁷

There are three packing houses in West Ocean City, which combined employ about sixteen people. There are probably at least 230 people employed on the charter and party boats in Ocean City, not including additional support staff or those that work at related businesses like bait and tackle shops. Recreational fishing is one of the more important aspects of Ocean City's tourist economy (Oles 2003). "Worcester County's 2,040 businesses employ 20,300 workers; an estimated 13 of these businesses have 100 or more workers. Chicken growing and processing is the major industry in Worcester County. Major private sector employers include Bel-Art Products [plastic components, laboratory equipment], Perdue Farms [poultry processing], and Tyson Foods, Inc [poultry processing]" (Worcester County 2008) [Tyson's was located in Berlin but closed down⁸]. Other major employers include Harrison Hotels, Atlantic General Hospital and Walmart (Worcester County 2008).

Ocean City – According to the U.S. Census 2000⁹, 60.4% (3,909 individuals) of the total population 16 years of age and over were in the labor force (see Figure 7), of which 5.6% were unemployed, 0.2% were in the Armed Forces, and 54.6% were employed.

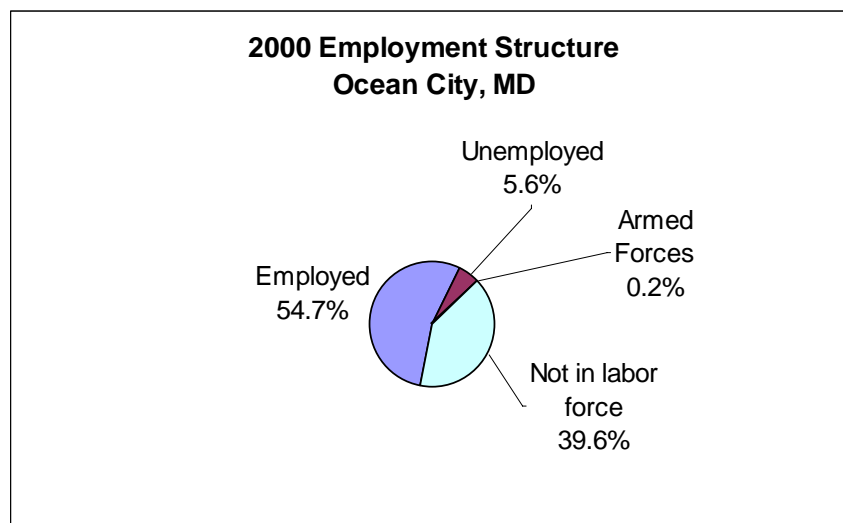


Figure 7. Employment Structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 12 positions or 0.3% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 392 positions or 11.1% of jobs. Arts, entertainment, recreation, accommodation and food services (29.5%), retail trade (12.9%), finance, insurance, real estate, and rental and leasing (12.0%), and educational, health, and social services (11.1%) were the primary industries.

⁷ Community Review comments, Jesse Houston, Director of Planning and Community Development, PO Box 158, Ocean City, MD 21843, October 10, 2007

⁸ Community Review Comment, Donna Abbott, Public relations, Ocean City Department of Tourism, 4001 Coastal Highway, Ocean City, MD 21842, October 22, 2007

⁹ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

Median household income in Ocean City was \$35,772, up 37.8% from \$25,959 in 1990 (US Census Bureau) and median per capita income was \$26,078. For full-time year round workers, males made approximately 4.2% more per year than females.

The average family in Ocean City consisted of 2.47 persons. With respect to poverty, 6.0% of families, down 6.4% from 1990 (US Census Bureau 1990) and 8.4% of individuals earned below the official U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 37.7% of all families of any size earned less than \$35,000 per year.

In 2000, Ocean City had a total of 26,317 housing units of which 14.2% were occupied and 9.4% were detached one unit homes. A few (2.2%) of these homes were built before 1940. Mobile homes, boats, RVs, vans, etc. accounted for 6.9% of the total housing units; 96.9% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$152,200. Of vacant housing units, 54.3% were used for seasonal, recreational, or occasional use. Of occupied units, 32.6% were renter occupied.

West Ocean City CDP – According to the U.S. Census 2000, 61.9% (1,724 individuals) of the total population 16 years of age and over were in the labor force (see Figure 7), of which 4.2% were unemployed, none were in the Armed Forces, and 57.7% were employed.

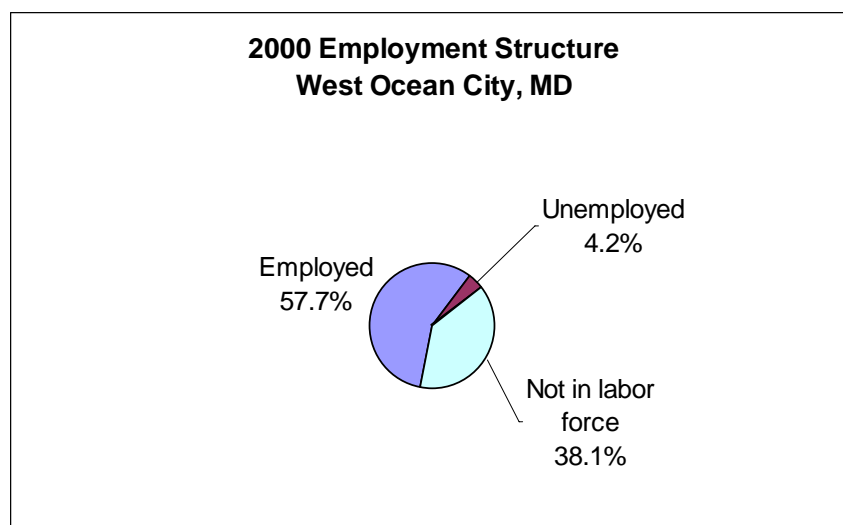


Figure 8. Employment structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 15 positions or 0.9% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 145 positions or 9.0% of jobs. Arts, entertainment, recreation, accommodation and food services (24.1%), retail trade (15.8%), finance, insurance, real estate, and rental and leasing (11.6%), educational, health, and social services (10.7%), and construction (10.7%) were the primary industries.

Median household income in West Ocean City was \$42,279, up 33.7% from \$31,632 in 1990 (US Census Bureau 1990) and median per capita income was \$28,132. For full-time year round workers, males made approximately 11.8% more per year than females.

The average family in West Ocean City consisted of 2.77 persons. With respect to

poverty, 3.0% of families, down from 9.3% in 1990 (US Census Bureau 1990) and 5.0% of individuals earned below the official U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 27.1% of all families (of any size) earned less than \$35,000 per year.

In 2000, West Ocean City had a total of 2,075 housing units of which 68.7% were occupied and 77.0% were detached one unit homes. Less than 5% (3.1%) of these homes were built before 1940. Mobile homes accounted for 10.1% of the total housing units; 88.6% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$157,500. Of vacant housing units, 14.2% were used for seasonal, recreational, or occasional use. Of occupied units, 20.1% were renter occupied.

Government

Ocean City is run by a City Manager and Council form of government. The mayor and Town Council include a Council President, Council Secretary and five general Council Members (Town of Ocean City 2008). West Ocean City is governed by Worcester County, which has a seven-member board of County Commissioners (Worcester County 2008).

Fishery involvement in government

Worcester County manages a commercial dock in West Ocean City. The Worcester County Commission has zoned the harbor area here as a commercial marine district, to protect commercial fishing operations from being pushed out by condominiums and other private development. The Worcester County Comprehensive Development Plan (WCPC 2006) also recognizes commercial fishing as one of the County's economic assets (p. 31) and has a goal of preserving fisheries and their nurseries (p. 33) and has 5 goals specifically aimed at retaining commercial fishing and seafood processing in the County (p. 60). Ocean City's comprehensive plan encourages water uses on the bay and marina construction (Oles 2003). It also recognizes the importance of water quality and commercial fishing to the town (OCPB 2007).

The State of Maryland Division of Natural Resources (DNR) manages fisheries in Ocean City and West Ocean City. The DNR has a Coastal Fisheries Advisory Committee which provides advice on fishery issues, preparing management plans, and works to develop objectives and management options for specific fisheries. The Committee has representation from Ocean City, West Ocean City, and different fishing groups.¹⁰ Ocean City also has a harbor master.

Institutional

Fishing associations

There is a statewide fishermen's organization called the [Maryland Watermen's Association](#) (MWA) but few of the ocean fishermen belong to it because it emphasizes helping the Chesapeake Bay fishermen rather than the ocean fishermen. The organization focuses more on the Bay fishermen because there are more bay crabbers, clammers, and gill netters than there are ocean fishermen. However, the MWA still broadly represent all those who work on the water in/of Maryland. The President of the Association also serves on the Mid-Atlantic Fishery

¹⁰ Community Review comments, Dave Blazer, Executive Director, Maryland Coastal Bays, 9199 Stephen Decatur Highway, Suite 4, Ocean City, MD 21842, October 12, 2007

Management Council (MAFMC) which focuses on bay and ocean fisheries issues.¹¹ The ocean fishermen are concerned that they are not prepared for what may happen and they lack representation (McCay and Cieri 2000). The Maryland Saltwater Sport Fishermen's Association also has a Chapter in Ocean City.¹²

There are some sportfishing groups in Ocean City that work to promote sportfishing in the area. One is the [Ocean City Marlin Club](#), which began in 1936. The club is primarily a social one, although they are becoming increasingly political. They also host several tournaments. The OC Surf Anglers hosts surf fishing tournaments. The Ocean Pines Fishing Club is made up of members of Ocean Pines, a planned community in West Ocean City. The captains of the charter boats located at the Ocean City Fishing Center are all members of the Ocean City Charter Captain's Association (Oles 2003).

Fishing assistance centers

Information on fishery assistance centers in Ocean City is unavailable through secondary data collection.

Other fishing related organizations

The [Marine Trades Association of Maryland](#) is involved in providing information for boaters and fishermen in the state of Maryland. They hold safety classes and have a wide variety of information for boaters in their website. They represent marine issues in front of the state legislature, participate on governmental boards and committees related to boating and fishing, they also provide information and host boat shows in the area. The OC Reef Foundation is working to provide artificial reefs around Ocean City for the area's recreational fishermen (Oles 2003). A Coast Guard Auxiliary is located in Ocean City and holds safety classes as well as it's normal duties.

Physical

Ocean City is located about 30 minutes from the Salisbury-Wicomico County Regional Airport and has locally the Ocean City Municipal Airport for private flights (Worcester County 2008; OCCVB nd). It is accessible from Routes 50 and 90 from the west, and Delaware Route 1 from the north. Ocean City is located about 4.5 hours from New York City, about 3 hours from Washington D.C. and about 3 hours from Philadelphia, PA. A large park and ride facility has been established outside of Ocean City which allows visitors to park here and catch a bus into town (Oles 2003; OCCVB nd).

The commercial fishing industry in Ocean City is actually located in West Ocean City, an unincorporated segment of Worcester County just across the bay from Ocean City. The harbor here has a commercially-owned dock, a recreational fishing marina, and three commercial packing houses. Some private dock owners also lease space to the commercial vessels (Oles 2003). The [Sunset Marina](#) has a sheltered 18 acre deep water basin that can accommodate vessels up to 100 feet in length. There are 20 charter boats located here, as well as a bait and tackle shop and marine supplies shop. The [Ocean City Fishing Center](#), also located in West

¹¹ Community Review Comments, Kelly Clements Barnes, Administrative Assistant, Maryland Watermen's Association, 1805A Virginia Street, Annapolis, MD 21401, September 13, 2007

¹² Community Review comments, Dave Blazer, Executive Director, Maryland Coastal Bays, 9199 Stephen Decatur Highway, Suite 4, Ocean City, MD 21842, October 12, 2007

Ocean City, has 170 slips, free parking and security. It is home to the largest charter fleet in the town, comprising 30 boats. It also has a bait shop, restaurant and repair service.

There are nine recreational marinas located in Ocean City and West Ocean City; 75% of the charter boats are found in three marinas, along with two of the largest ocean-going party boats. There are also a number of places along the shore frequented by anglers, including three pay piers (the Ocean Pier and the Oceanic Pier), the Route 50 Bridge, a number of public piers and bulkheads, and a public crabbing and fishing area on Isle of Wight. There are four public boat launches found in West Ocean City harbor. The Ocean City area also has a number of fish cleaning businesses (Oles 2003). The government of Ocean City owns the Bayside Boardwalk/9th St Fishing Pier and the Bering Road Boat Ramp (WCPC 2006).

INVOLVEMENT IN NORTHEAST FISHERIES¹³

Commercial

The commercial fishing industry in Ocean City is actually located in West Ocean City (McCay and Cieri 2000:89). However, the landings are declared for Ocean City and most vessels are listed as having their home port in Ocean City. The most valuable species in Ocean City in 2006 was scallops, followed by the surf clam and ocean quahogs. Overall, the landings values for 2006 were higher than the 10-year average values for the surf clam and ocean quahog category, and for scallops but were lower for the “other” category (see Table 1).

The number of vessels listing Ocean City as their home port was highly variable from 1997 to 2006, ranging from a low of 17 in 1999 to a high of 47 in 2006. There were more boats listing Ocean City as their home port than there were vessels with owners residing in Ocean City, indicating that many people from outside Ocean City dock their boats there. Overall, the value of landings to home ported vessels showed a consistent increase for the years provided as did the level of fishing landed port (see Table 2). The level of home port fishing for Ocean City vessels was less in most years than the level of landings for Ocean City, pointing to the fact that many people from outside Ocean City are dropping off their catches in the town.

Ocean City is a popular place for fishermen in the area to unload their catches because it is the only major ocean port between Cape May, NJ and Hampton Roads, VA. Even the people who are considered to be locals do not live in Ocean City itself but live about 30 minutes away on the land side of the harbor (McCay and Cieri 2000). Some of the fishermen who land their catch here are from Delaware, as there are no packing facilities in Delaware (Oles 2003).

In 2003 West Ocean City was home to five surf clam and ocean quahog boats, at least seven draggers, and at least fifteen small boats that engaged in potting, gillnetting, dredging, and/or handlining. Conching is a common practice among the smaller vessels. Twenty years

¹³ In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

ago, there were 30 surf clam and ocean quahog boats docked here, but consolidation resulting from the use of ITQs drastically reduced this number. Most of these are small, owner-operated vessels with the exception of four surf clam and ocean quahog boats owned by J.H. Miles Co., a clam harvesting and processing operation based in Norfolk, VA. There are three fish and shellfish packing facilities here, one of which is a satellite operation of J.H. Miles. Two of these fish houses opened recently, however one of these was a “re-opening” of an older fish house.¹⁴ Another fish house has existed there since 1957. The older packing house mostly buys from local boats, and has two draggers that land here. Some of the seafood here is sold at their retail market or to local restaurants, but most is sold to buyers in Hampton, VA, Philadelphia, or New York City (Oles 2003).

Landings by Species

Table 1. Dollar value of Federally Managed Groups of landings in Ocean City

	Rank Value of Average Landings from 1997-2006
Other¹⁵	1
Surf Clams, Ocean Quahog	2
Scallop	3
Summer Flounder, Scup, Black Sea Bass	4
Monkfish	5
Dogfish	6
Lobster	7
Squid, Mackerel, Butterfish	8
Bluefish	9
Skate	10
Smallmesh Groundfish¹⁶	11
Largemesh Groundfish¹⁷	12
Tilefish	13
Herring	14
Red Crab	15

(Note: Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.)

¹⁴ Community Review comments, Dave Blazer, Executive Director, Maryland Coastal Bays, 9199 Stephen Decatur Highway, Suite 4, Ocean City, MD 21842, October 12, 2007

¹⁵ “Other” species includes any species not accounted for in a federally managed group

¹⁶ Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

¹⁷ Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

Vessels by Year¹⁸

Table 1. Federal Vessel Permits Between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)
1997	28	18
1998	19	16
1999	17	14
2000	20	10
2001	25	9
2002	23	7
2003	27	9
2004	27	8
2005	40	12
2006	47	15

(Note: # Vessels home ported = No. of permitted vessels with location as homeport, # Vessels (owner's city) = No. of permitted vessels with location as owner residence¹⁹)

Recreational

Ocean City is famous for its recreational fishing and hosts many fishing tournaments every year. The most popular species to fish are bigeye and yellowfin tuna, mako and dolphin, white marlin, blue marlin and sailfish (OCCVB nd). Ocean City is known as the “White Marlin Capital of the World” (McCay and Cieri 2000). There are also many sportfishing associations such as the [Ocean City Marlin Club](#) and the [Maryland Saltwater Sport Fishing Association](#). Ocean City has at least five large ocean-going party boats and around six party boats that fish in the bay. There are an estimated 100 charter boats in Ocean City’s six major marinas. Tuna fishing is especially popular here; marlin tends to be a more elite fishery targeted by more expensive and exclusive charter boats. Ocean City is also popular with recreational anglers who fish from their own boats, from rental boats, or from shore; many of these are targeting summer flounder. There are numerous jetties, pay piers, and bridges from which anglers may fish, in addition to surf fishing from the beach. Crabbing and clamming are also important recreational activities. According to NMFS VTR data, between the years 2001-2005 there were a total of 31 charter and party boats which logged trips in Ocean City, carrying a total of 83,505 anglers on 3,137 different trips.

Subsistence

Fishing for something to take home for dinner is less common in Ocean City now than it once was, and catch-and-release fishing is increasingly popular (Oles 2003).

FUTURE

The Ocean City Development Corporation, appointed by the Mayor and Council, has many plans for the Downtown area of Ocean City. Current plans include more parking and mass transportation such as busses to help bring people to the downtown area. They are also planning

¹⁸ Numbers of vessels by owner’s city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

¹⁹ The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

on building a new wraparound boardwalk. A bayfront public park was completed in 2006.²⁰ New zoning will help to bring in more businesses and improvement of the roadways and signs will make getting around much easier (OCPB 2007).

Some people who live in the Ocean City area have been worried about being priced out because the area is a resort destination, though recent drops in real estate prices may at least temporarily mitigate that (Latshaw 2007, 2008; Shane 2008).

Fishermen in the area are also concerned about rezoning in the harbor. One major concern is that the docks will become non-conforming meaning that replacement or fixing of the structures will be impeded. The fishermen are interpreting this rezoning to mean that people in the area are trying to force out the fishermen; much of the rezoning has been because of new condominiums being built in the area (McCay and Cieri 2000). Despite protective zoning measures, gentrification of the waterfront is a concern. Commercial fishing here does, however, serve as a tourist attraction and is important to the community in that respect (Oles 2003; OCPB 2007).

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²⁰ Community Review Comment, Donna Abbott, Public relations, Ocean City Department of Tourism, 4001 Coastal Highway, Ocean City, MD 21842, October 22, 2007

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CHINCOTEAGUE, VA¹

Community Profile²

PEOPLE AND PLACES

Regional orientation

The town of Chincoteague (37.93°N, 75.38°W), is located in Accomack County in the state of Virginia on Assateague Island. The town has a total area of 37.1mi², of which 27.4 mi² is water (USGS 2008). It is located about 3.5 hours from Washington D.C., about 4 hours from Philadelphia and about 5.5 hours from New York (AssateagueIsland.com nd).



Map 1. Location of Chincoteague, VA (US Census Bureau 2000)

Historical/ Background

Chincoteague is named for the local Indian tribe that originally lived in the area called the Gingo-Teague Tribe. The first settlement came about in the mid- 17th Century when Colonel Daniel Jenifer applied for a grant to transport people to both Chincoteague and Assateague Islands. The first people to settle here were farmers who raised stock. The town grew slowly and lived mostly in isolation, with residents only traveling to the mainland for trading. This continued until the late 1800s. People would trade as much as possible, gathering numerous supplies so they could make as few trips as possible to the mainland.

¹ These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

² For purposes of citation please use the following template: “Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov.”

One of Chincoteague’s main exports was oysters and due to the railroad in 1876, seafood trading expanded significantly. During the 1900s, large homes, shops and hotels sprung up and the people on the island no longer lived in such isolation. By the 1920s, Chincoteague suffered two devastating fires, one in 1920 and one in 1924. The fires burnt down many businesses and homes including an oyster house, factories and the railroad (Chincoteague Chamber of Commerce nd). In 1922 Chincoteague was connected to the mainland by a causeway, which increased tourism to the island especially sport fishing interests, which had been a popular activity here since the construction of the railroad (Oles 2005). Today, Chincoteague is still known for its oysters and is a resort island with tourism driving its economy (Chincoteague Chamber of Commerce nd).

Demographics³

According to Census 2000 data, Chincoteague had a total population of 4,317, up 20.9% from the reported population of 3,572 in 1990. Of this 2000 total, 48.6% were male and 51.4% were female. The median age was 56.1 years and 79.4% of the population was 21 years or older while 25.6% was 62 or older.

Chincoteague’s age structure (see Figure 1) shows a preponderance of residents in the 50 to 59 years age grouping. The age group of 20-29 is smaller compared to the other age groups showing that apparently young people are leaving the community after high school.

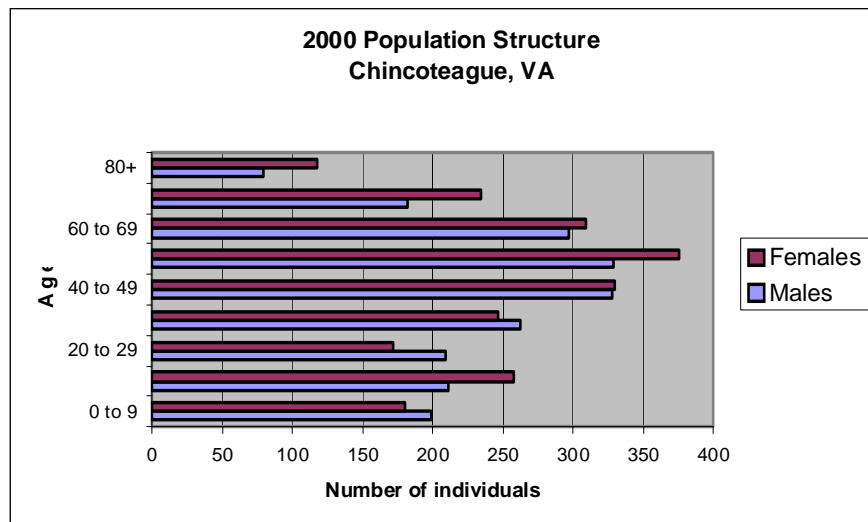


Figure 1. Chincoteague’s population structure by sex in 2000 (US Census Bureau 2000)

The majority of the population was white (96.9%) with 1.4% of residents black or African American, 0.4% Asian, 0.9% Native American, and 0.0% Pacific Islander or Hawaiian (see Figure 2). Also, 0.5% (23 people) of the total population is Hispanic/Latino. Residents link their heritage to a number of ancestries including the following: English (18.8%), American (15.1%), German (14.3%), and Irish (11.3%) (see Figure 3). With regard to region of birth, 44.2% were born in Virginia, 53.6% were born in a different state and 1.7% were born outside of the U.S. (including 0.7% who are not United States citizens).

³ While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

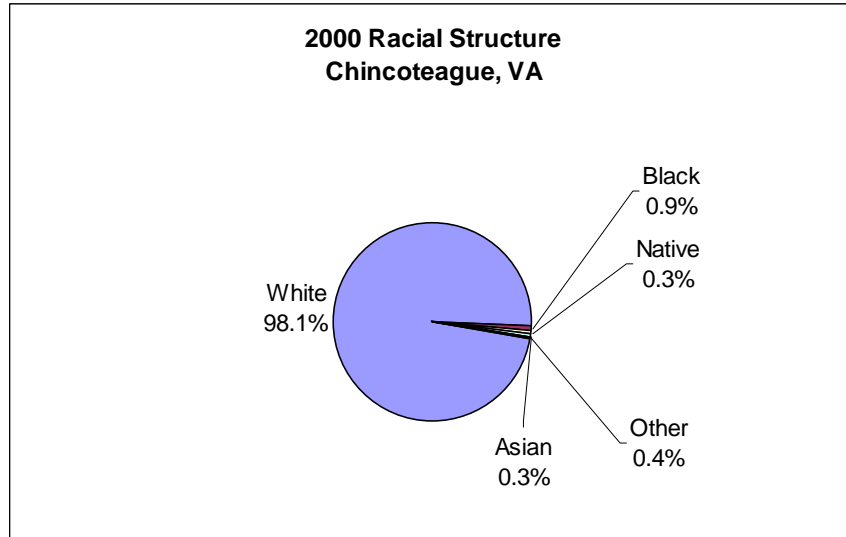


Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

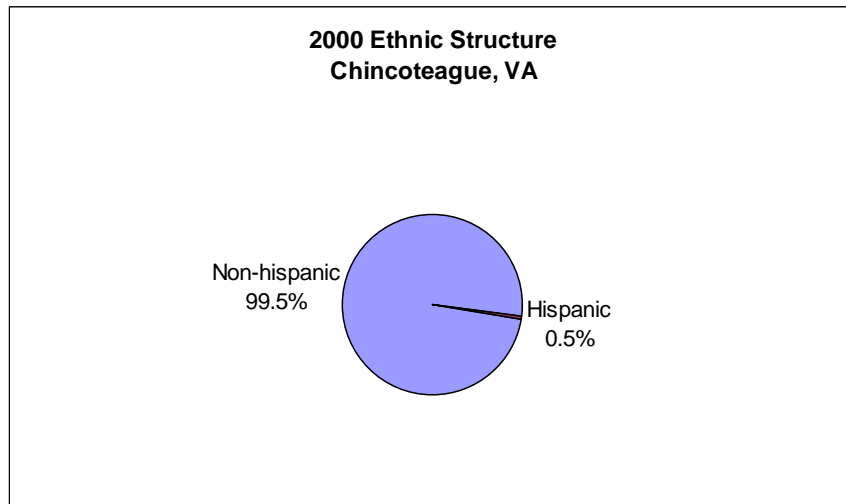


Figure 3. Ethnic Structure (US Census Bureau 2000)

For 96.0% of the population, only English was spoken in the home, leaving 4.0% in homes where a language other than English was spoken, including 1.2% of the population who spoke English less than “very well” according to the 2000 Census.

Of the population 25 years and over, 71.4% were high school graduates or higher and 15.1% had a bachelor’s degree or higher. Again of the population 25 years and over, 10.0% did not reach ninth grade, 18.6% attended some high school but did not graduate, 34.7% completed high school, 17.6% had some college with no degree, 3.9% received an associate’s degree, 9.8% earned a bachelor’s degree, and 5.4% received either their graduate or professional degree.

Although religion percentages are not available through the U.S. Census, according to the Association of Religion Data Archives (ARDA) in 2000, the religion with the highest number of congregations and adherents in Accomack County was United Methodist with 47 congregations and 7,338 adherents. Other prominent congregations in the county were Southern Baptist Convention (17 and 3,868 adherents), and Catholic (2 and 952 adherents). The total number of adherents to any religion was down 6.1% from 1990 (ARDA 2000).

Issues/Processes

When the town of Chincoteague began to flourish, oysters became a very important commodity on the island. At one point there were eight oyster packing houses on the island, but due to an infection of the screw bore parasite, the number of consumable oysters seriously declined. There is only one packing house left at present. Also, packing houses for fish have also been reduced in number in recent years because of regulations regarding the fluke fishery. There have also been restrictions placed on the dogfish fishery, limiting the types of harvestable fish, increasing the competition between fishermen for a limited number of species. This competition also causes the market to become flooded which lowers the price per pound to going to fishermen (Oles 2005).

Another problem in Chincoteague is fishing gear storage. Fishermen operating out of the town harbor are not allowed to store their gear there, and must transport it to and from their own property, despite the fact that the harbor is intended for commercial use. There are also potential conflicts between commercial and recreational fishermen in the town. One recreational fishermen reported that, "commercial fishermen can do no wrong here [in Chincoteague]," because of the island's historical connection to the commercial fishing industry (Oles 2005).

Cultural attributes

Chincoteague has several fishing related attributes including the Maritime Museum, the Seafood Festival, and an Oyster Festival. In addition, there is also the tradition of 'pony penning' in the town dating back to the early settlers.

The Maritime and Oyster Museum was expanded in 1996 and tells the story of the town's seafood and oystering history. It was started by a group of women on the island in 1965 and today is houses many exhibits relating to the town's past. The Seafood Festival is an all you can eat event where the town's seafood is on display by local restaurants. In addition to food, there is entertainment such as music and an information tent. The Oyster festival was started by the Chamber of Commerce to promote the town's seafood. This is also an all you can eat event where oysters are prepared in a wide variety of ways. Proceeds from the event go to promoting the island (Chincoteague.com nd).

The town of Chincoteague is also known for their breed of horses known as the Chincoteague pony. Early settlers practiced penning as a way for livestock owners "to claim, brand, break and harness their loose herds." By the 1700s, it was a town event and today the event includes food and entertainment in addition to the traditional penning. The event is held in July during the Chincoteague Volunteer Firemen's Carnival to raise money for the fire company and to keep the wild population of horses at a certain level. The tradition involves "Salt Water Cowboys" which herd the horses across the Assateague Channel then through town to a corral at the Carnival Grounds where they are auctioned to interested buyers (Chincoteague.com nd).

There is also a Blessing of the Fleet on Memorial Day Weekend and many fishing tournaments held throughout the year.

INFRASTRUCTURE

Current Economy

While employer information for Chincoteague or Accomack County was not identified through secondary data collection, the top employers for the Eastern Shore of Virginia, including Accomack County may include jobs held by Chincoteague residents. The top employers for the Eastern Shore were: Perdue Farms (1,600 employees), Tyson Farms (950 employees), Accomack

County Public Schools (950 employees), NASA Wallops Flight Facility (750 employees), and Shore Health Services Inc. (750 employees) (ANPDC nd).

According to the U.S. Census 2000⁴, 62.0% (2,272 individuals) of the total population 16 years of age and over were in the labor force (see Figure 4), of which 6.6% were unemployed, 0.8% were in the Armed Forces, and 57.2% were employed.

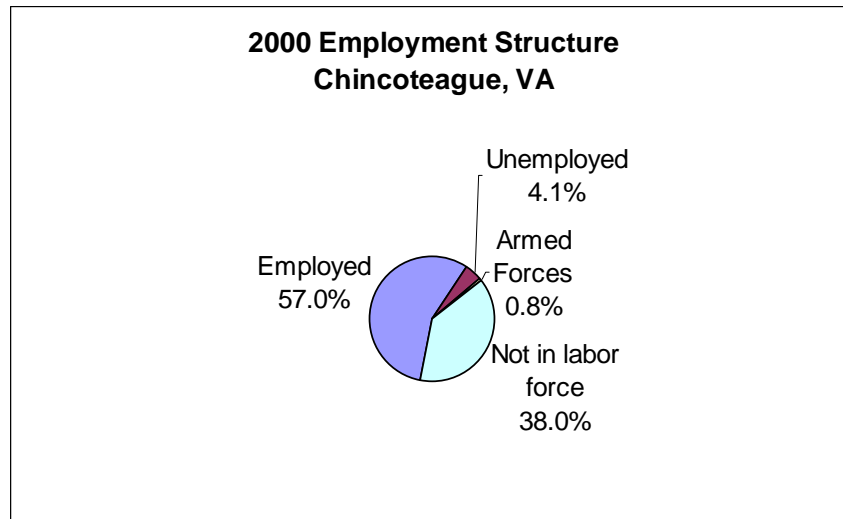


Figure 4. Employment Structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 122 positions or 5.8% of all jobs. Self-employed workers, a category where fishermen might be found, accounted for 302 positions or 14.4% of all jobs. Arts, entertainment, recreation, accommodation and food services (20.6%), retail trade (15.9%) construction (13.6%) and educational health/ social services (10.0%) were the primary industries.

Median household income in Chincoteague was \$28,514 (up 29.6% from \$21,996 in 1990 [US Census Bureau 1990]) and median per capita income was \$20,367. For full-time year-round workers, males made approximately 29.8% more per year than females.

The average family in Chincoteague consisted of 2.63 persons. With respect to poverty, 9.7% of families (down from 10.0% from 1990 [US Census Bureau 1990]) and 12.7% of individuals earned below the official U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) [US Census Bureau 2000b]. In 2000, 53.8% of all families (of any size) earned less than \$35,000 per year.

In 2000, Chincoteague had a total of 3,970 housing units of which 52.1% were occupied and 62.6% were detached one unit homes. Less than twenty percent (13.6%) of these homes were built before 1940. Mobile homes, vans, and boats accounted for 23.5% of the total housing units; 97.4% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$105,600. Of vacant housing units, 43.2% were used for seasonal, recreational, or occasional use. Of occupied units, 20.7% were renter occupied.

⁴ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

Government

The town of Chincoteague is governed by a mayor and town council. The town council is made up of six councilmen. They are all elected to four-year terms with three councilmen being elected every two years so that the elections are staggered. The Town Manager is appointed and also acts as the Clerk to the Council (Town of Chincoteague nd).

Fishery involvement in government

The Virginia Shellfish Growers' Association has clout with the government and often have their concerns addressed when otherwise commercial fishermen are not included in the process. Additionally, the Town of Chincoteague has sent its own representatives to meetings of the VMRC to support the local sport fishing industry in the town. Both the town and Accomack County have declared their commitment to protecting both commercial and recreational fishing interests here (Oles 2005). Chincoteague also has a harbormaster.

The Virginia Marine Resources Commission (VMRC) is a state agency established in 1875 to preserve Virginia's marine and aquatic resources, including all tidal waters. The VMRC's Fisheries Management Division aids in the planning of state, interstate, and federal management organizations. Its Fisheries Advisory Council helps agencies create and implement management plans for both commercial and recreational fishery species. The Commission's headquarters are located in Newport News (VMRC nd).

Institutional

Fishing associations

The Virginia Shellfish Growers' Association works on behalf of shellfish growers in the state. The Eastern Shore Working Waterman's Association is also located in Chincoteague. Members meet for monthly meetings and to express concerns regarding management of packing houses and docks (Oles 2005).

Chincoteague also has the Chincoteague Island Charterboat Association, which represents the interests of sportfishermen and is engaged in the fisheries management process (Oles 2005).

Fishing assistance centers

Information on fishing assistance centers in Chincoteague is unavailable through secondary data collection.

Other fishing related organizations

The [Assateague Mobile Sportfishermen Association](#) has a number of recreational fishermen from Chincoteague as members (Oles 2005). This group sponsors fishing tournaments, beach clean-ups, a scholarship program, and other events, and is involved in activism to preserve public access to beaches for sportfishermen.

Physical

Chincoteague is accessible from the mainland via Rt. 175, which extends over a bridge and is the only road to the mainland. Buses travel through the town and the nearest airport is the Salisbury Airport in Maryland. US Air serves this small airport and offers travel to Washington D.C., Baltimore and Philadelphia (Chincoteague Chamber of Commerce nd). Chincoteague is

about 40 miles from Wachapreague, 50 miles from Ocean City, MD, and 168 miles from Washington, DC (MapQuest 2005).

There are currently six marinas in Chincoteague. Some of these marinas, like Capt. Bob's Marina, seem to focus on charter tours and dockage is available at Curtis Merritt Harbor. Curtis Merritt Harbor is the primary dockage area for Chincoteague and is owned by the town. There are 70 slips here, and commercial fishermen are given priority in the assignment of slips, as are charter and party boats. Commercial fishing vessels generally unload their own catch into coolers and transport it to fish packers themselves. Chincoteague has a substantial infrastructure devoted to sport fishing. In addition to the marinas there are also many tackle and bait shops and a number of public boat launches (Oles 2005).

INVOLVEMENT IN NORTHEAST FISHERIES⁵

Commercial

Commercial fishing in Chincoteague is in decline in recent years. There are only two fish packing houses in the town, one of which is doing well and brings an average of 80,000 lbs. per day and has increased the types of fish it packs. The other packing house is having trouble staying in business, while a third recently closed, due in part to a lower number of fish being landed because of government restrictions on catch. In addition, there used to be many oyster houses on the island, with estimates ranging from eight to twelve. Today there are only two left. There is also a shellfish aquaculture facility on the island that raises clams and oysters that has been in business for 30 years (Oles 2005). Gary Howard Seafood is a business which sells locally caught seafood and has a small oyster packing operation (Chincoteague.com nd). Seaside Lobsters in Chincoteague sells lobsters fresh off the boat (Chincoteague Chamber of Commerce nd). [Tom's Cove Aqua Farms](#) raises hard clams and oysters for wholesale, and Chincoteague Shellfish Farms is another aquaculture business located here (Chincoteague Chamber of Commerce nd).

The most valuable species in Chincoteague is scallops, followed by summer flounder, scup, and black sea bass, both with 2006 values significantly higher than the ten year averages. The 2006 values of "Other", monkfish, and lobster were also greater than the ten year averages (see Table 1). Dogfish saw a sizeable decrease, likely due to restrictions placed on the dogfish fishery.

The number of vessels home ported in Chincoteague generally increased over the years until 2003 when the numbers declined yearly through 2006. The number of vessels whose owners live in Chincoteague also followed a similar trend as the number of home port vessels. While the value for home ported vessels in Chincoteague increased until 2003, the level of fishing landed port continued to increase significantly throughout the ten year time period, with the exception of a decline in 2006 (see Table 2).

⁵ In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

Landings by Species

Table 1. Dollar value of Federally Managed Groups of landing in Chincoteague

	Average from 1997-2006	2006 only
Scallop	2,730,647	7,752,896
Summer Flounder, Scup, Black Sea Bass	1,126,760	2,159,348
Other ⁶	506,696	921,375
Monkfish	401,496	540,864
Lobster	61,952	143,776
Dogfish	51,843	38,035
Squid, Mackerel, Butterfish	38,565	12,133
Bluefish	12,833	54,857
Skate	6,221	1,710
Tilefish	1,522	14
Smallmesh Groundfish ⁷	379	0
Largemesh Groundfish ⁸	293	0

Vessels by Year⁹

Table 2. All columns represent vessel permits or landings value combined between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port (\$)	Level of fishing landed port (\$)
1997	13	10	6,601	906,166
1998	15	15	24,382	763,754
1999	17	15	48,132	2,138,891
2000	21	16	362,409	2,431,371
2001	24	17	354,429	2,569,596
2002	28	18	321,982	2,877,693
2003	26	18	503,801	4,078,803
2004	22	17	299,244	7,248,586
2005	25	17	311,281	14,752,188
2006	22	16	333,110	11,625,008

Vessels home ported = No. of permitted vessels with location as homeport

Vessels (owner's city) = No. of permitted vessels with location as owner residence¹⁰

Level of fishing home port (\$) = Landed value of fisheries associated with home ported vessels

Level of fishing landed port (\$) = Landed value of fisheries landed in location

⁶ "Other" species includes any species not accounted for in a federally managed group

⁷ Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

⁸ Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

⁹ Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

¹⁰ The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

Recreational

Recreational fishing is a popular activity in Chincoteague. There are many hotels catering to tourists who rent charter boats and there are approximately 24 charter fishing vessels; however, party boats businesses have never been successful here. Many of the charter boat captains make their living full time from charter fishing; others do it part-time and work another job during the fall and winter.

Fishing also occurs at the Town Dock bulkhead and the pier at Memorial Park (Oles 2005). There are also several public boat launches in the town. The most popular types of species targeted inshore include: flounder, sea trout, bluefish, rockfish, spot, croaker, sheepshead, triggerfish, red drum, black drum, sea bass, small sharks and tautog. Offshore fishing targets bluefish, mako and other sharks, bluefin, yellowfin and albacore tuna, king mackerel, dolphinfish, wahoo and billfish (Daybreak Services 2007).

There are also many fishing tournaments hosted by the various marinas. Capt. Bob's hosts a tuna tournament every July; Barnacle Bill's has a shark tournament and tuna tournament yearly; East Side Marina hosts a tuna tournament; and Capt. Steve's bait and Tackle hosts a surf fishing tournament yearly (Oles 2005).

Subsistence

Information on subsistence fishing in Chincoteague is either unavailable through secondary data collection or the practice does not exist.

FUTURE

A new park is being built in the downtown area of Chincoteague. This will make another site in town where events and festivals can be hosted. The town hopes that families will use the park regularly for recreational activities and the area is cited to be built to provide a beautiful view of the sunset. The park will also have slip space for both recreational and commercial vessels. Also, the town is building a new visitors' center for the wildlife refuge. It will house many exhibits as well as an auditorium and classroom and wet lab (Chincoteague Chamber of Commerce nd).

Many commercial fishermen see the future of fishing in Chincoteague as bleak. There has been a sharp decline in fishermen in recent years and it is hard to recruit new fishermen into the profession. Many of the older fishermen's children do not want to continue the tradition of following in their fathers' footsteps and most fishermen would not want their children getting into the business anyway. One local gillnetter in his mid-thirties noted that he is the youngest fisherman he knows. However, the town government is said to be supportive of commercial fishing and they foresee resurgence in the importance of seafood to their town (Oles 2005).

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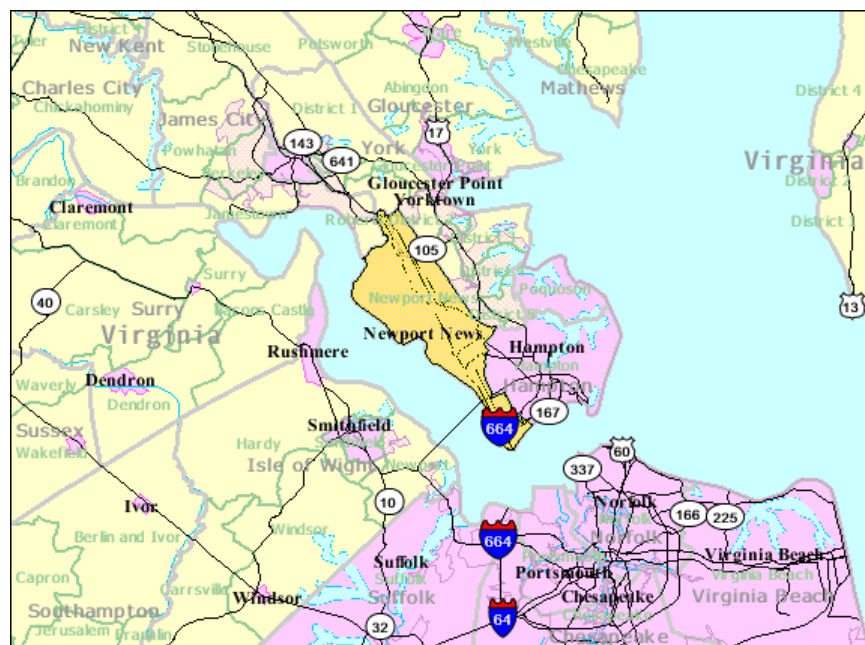
NEWPORT NEWS, VA¹

Community Profile²

PEOPLE AND PLACES

Regional orientation

The city of Newport News, Virginia (37.07° N, 76.48° W) is located on the Virginia Peninsula and is a consolidated city with the former Warwick County. The city is located 83 miles north of the North Carolina border and is on the northeast side of the James River, the southern-most major river that leads into the Chesapeake Bay (USGS 2008). The city encompasses 62.9 square miles of land area and has 43.5 miles of river shoreline (NNEDA nd). Newport News is part of the Hampton Roads area, which includes Newport News, Hampton, and Virginia Beach, as well as a number of other cities and towns whose inclusion varies by source.³



Map 1. Location of Newport News, VA (US Census Bureau 2000)

Historical/Background

Irish colonists originally settled Newport News around 1620, but it did not become a large settlement until 1881 when it was “chosen as the Atlantic deep water terminus of the

¹ These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

² For purposes of citation please use the following template: “Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov.”

³ NOAA/NMFS in its Fisheries of the US defines Hampton Roads as Virginia Beach, Norfolk, Hampton, Newport News and Seaford (Liz Pritchard, Fisheries Statistics, Liz.Pritchard@noaa.gov). Hampton Roads Transit lists its destinations as Chesapeake, Hampton, Newport News, Norfolk, Portsmouth and Virginia Beach (<http://www.gohrt.com/schedulesandservices/busroutes.html>).

Chesapeake and Ohio Railway (C&O)” (City of Newport News nd). In 1886, the settlement’s shipbuilding industry began and since then, Newport News has become a major center for ship building and repair. Because of its safe harbor and strategic location in the Mid-Atlantic, the city is also a port for transatlantic and coastal shipping for products like oil, coal, tobacco, grain, and ores (Anon 2007). The defense industry has also been a strong influence in this city.

Demographics⁴

According to Census 2000 data, Newport News had a total population of 180,150, up 5.9% from a reported population of 170,045 in 1990 (US Census Bureau 1990). Of this 2000 total, 48.4% were males and 51.6% were females. The median age was 32.0 years and 67.7% of the population was 21 years or older while 11.9% was 62 or older.

Newport News age structure (see Figure 1) showed slightly more males than females for age groups zero to 29 years, but then more females 30 to 80+ years. The population was relatively even from age groups zero to 49 years, then showing a significant decrease in population which accelerated with older age groups. This implied either that men and women leave (move or die) Newport News around age 50 years, or that a younger population has moved into the town. The latter is more likely, especially since there is a large military presence in the city.

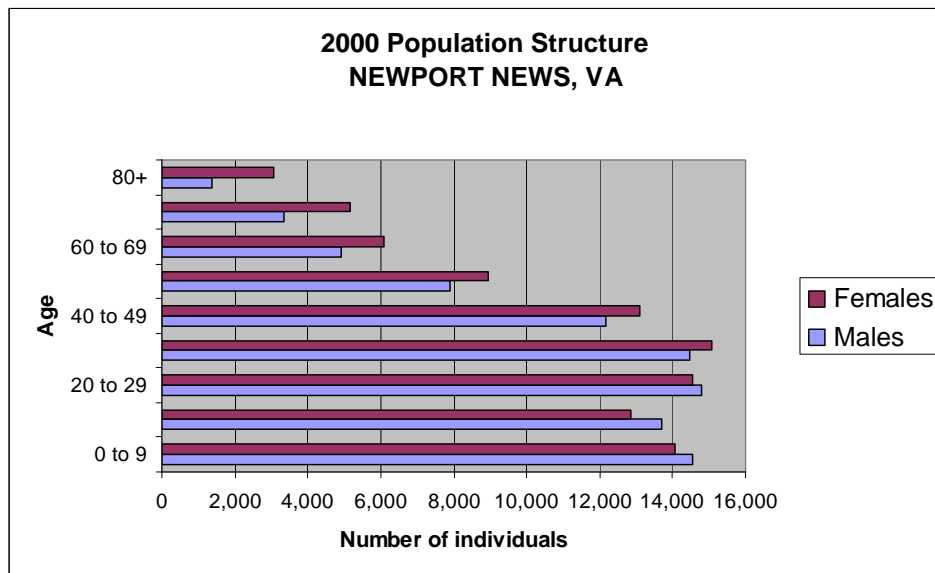


Figure 1. Newport News population structure by sex in 2000

The majority of the population was white (55.0%), with 40.2% black or African American, 2.4% Asian, 0.4% Native American, and 0.1% Pacific Islander or Hawaiian (see Figure 2). Only 4.2% of the total population identified themselves as Hispanic/Latino (see Figure 3). Residents linked their backgrounds to a number of different ancestries including: German (9.6%), English (8.3%), Irish (7.4%), Italian (3.2%), French (2.0%), and Scottish (1.6%). With regard to region of birth, 48.1% were born in Virginia, 44.4% were born in a

⁴ While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

different state and 2.7% were born outside of the U.S. (including 2.3% who were not United States citizens).

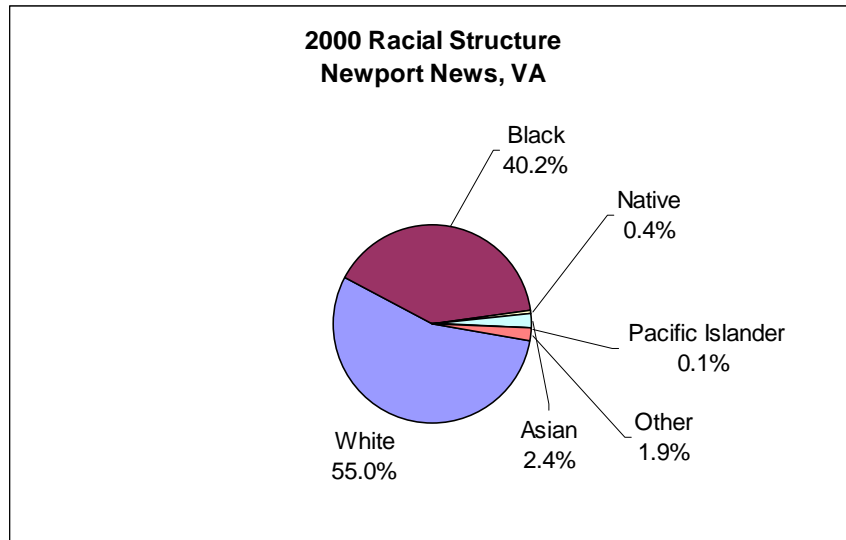


Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

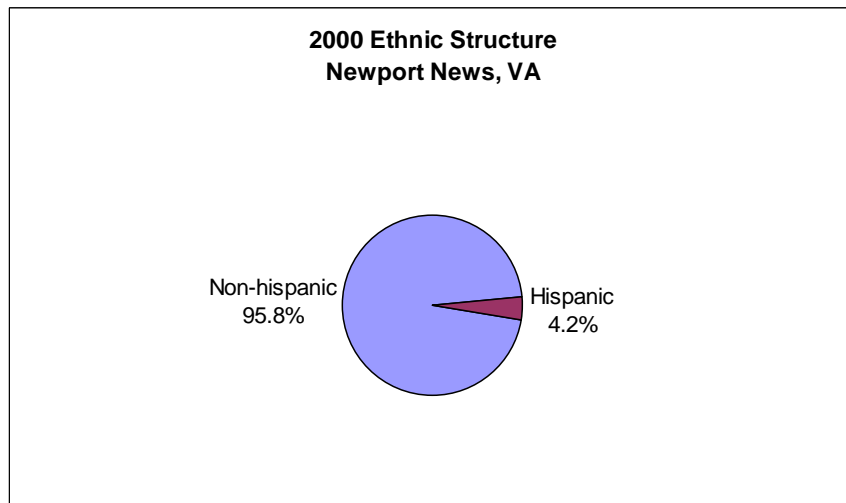


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 91.7% of the population, only English was spoken in the home, leaving 8.3% in homes where a language other than English was spoken, including 2.8% of the population who spoke English less than “very well” according to the 2000 Census.

Of the population 25 years and over, 84.5% were high school graduates or higher and 19.9% had a Bachelor’s degree or higher. Again of the population 25 years and over, 4.2% did not reach ninth grade, 11.3% attended some high school but did not graduate, 30.1% completed high school, 27.2% had some college with no degree, 7.3% received their Associate degree, 13.4% earned their Bachelor’s degree, and 6.5% received either their graduate or professional degree.

Although religion percentages are not available through the U.S. Census, according to the Association of Religion Data Archives (ARDA) in 2000, the religion with the highest number of congregations and adherents in Newport News County was Southern Baptist with 21

congregations and 19,296 adherents. Other prominent congregations in the county were Catholic (4 with 11,414 adherents), and Methodist (11 with 7,478 adherents). The total number of adherents to any religion was up 0.5% from 1990 (ARDA 2000).

Issues/Processes

Fort Eustis in Newport News has been placed on the EPA National Priority List because of contamination of the surrounding watershed by chemicals leaching from the facility. There has been concern about recreational fishermen consuming fish taken from waterways around Fort Eustis, as some fish have been found to be contaminated with PCBs (DHHS nd).

The city's plans to construct a large reservoir in the Mattaponi River have been highly controversial, resulting from concerns that construction will harm an important spawning ground for shad in the river (Anon 2004)

Cultural attributes

The Virginia Marine Resources Commission (VMRC) allocates funds (called the Recreational Fishing Development Funds) from the sale of recreational fishing licenses, to support a children's fishing clinic every July at the James River Pier with the Peninsula CCA.⁵ There is also a popular Oyster Roast in October (NNDPRT nd). The Mariners' Museum holds weekly talks on maritime history, though few of these are related specifically to fishing (City of Newport News nd). Hampton, which is adjacent to Newport News, celebrates the [Hampton Bay Days](#) (a family oriented festival about Chesapeake Bay) and the Seafest (a large marine trade show) (City of Hampton 2004). Both of these events occur annually in early September.

The Mariners Museum noted above holds a large collection of artifacts and information about maritime history (Mariners Museum nd). The *Monitor* National Marine Sanctuary has its headquarters at NOAA's Maritime Archaeology Center, which is on the grounds of the Mariners Museum. The actual National Marine Sanctuary is located 16 miles off-shore and was established to protect and preserve the remains of the U.S.S. Monitor (NOAA NOS nd).

INFRASTRUCTURE

Current Economy

The location of Newport News is strategic for its easy access and safe harbor for shipping and transport. It currently has a large defense sector (military bases, shipbuilding, and support industries), but has been working to diversify its economy for the past twenty years. The technology sector has increased, probably attracting younger workers (NNEDA nd).

In Newport News, the largest employers for manufacturing, distribution, teleservice and technology are Northrop Grumman (15,000+), Ferguson Enterprises (1000-2500) and Canon Virginia (1000-2500). The largest employers in the service industry include the U.S. Army Transportation Center at Fort Eustis (10,000+) and Newport News School System (5,000-10,000). "The largest employers in the retail industry and temporary employment agencies are Production System Services and Wal-Mart/Sam's Club" (both 500-1,000) (NNEDA nd). Also of interest, according to the 2000 census 19.9% of the civilian population 18 years or over had veteran status. The largest employer in not only the city but in all of Virginia is [Northrop Grumman](#), employing 19,000 people. The corporation boasts its status as "the nation's sole designer, builder and re-fueler of nuclear-powered aircraft carriers and one of only two

⁵ Personal communication, Sonya Davis, Virginia Marine Resources Commission, Fisheries Management Division, 2600 Washington Ave., 3rd Floor, Newport News, VA 23607, 757-247-2200, 6/9/05

companies capable of designing and building nuclear-powered submarines. The sector also provides after-market services for a wide array of naval and commercial vessels.” (Northrup Grummond nd).

According to the US Census 2000⁶, 68.3% (92,586 individuals) of the total population 16 years of age and over were in the labor force (see Figure 4), of which 3.4% were unemployed, 7.2% were in the Armed Forces, and 57.7% were employed.

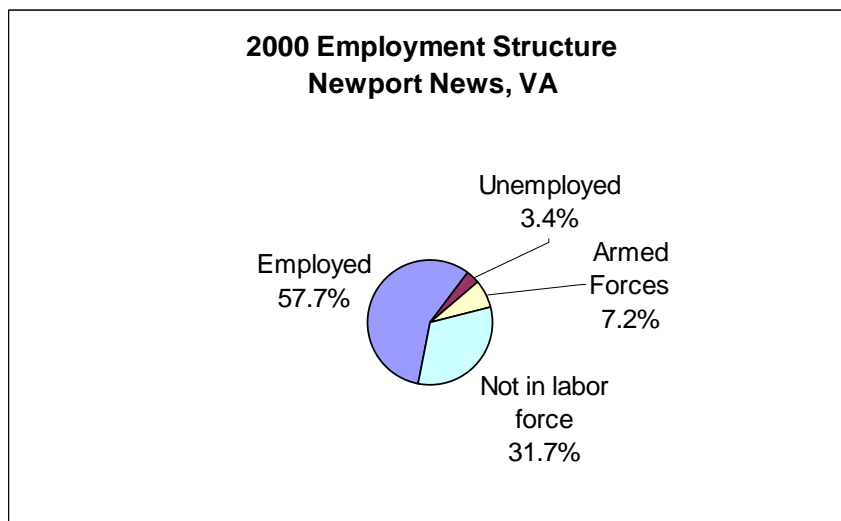


Figure 4. Employment Structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 211 positions or 0.3% of all jobs. Self employed workers, where fishermen might be found, accounted for 3,256 positions or 4.2% of jobs. Education, health, and social services (19.3%), manufacturing (15.3%), retail trade (12.8%) and arts, entertainment, recreation, accommodation and food services (10.0%) were the primary industries.

Median household income in Newport News was \$36,597 (up 33.2% from \$27,469 in 1990) and per capita income was \$17,843. For full-time year round workers, males made approximately 28.7% more per year than females.

The average family in Newport News consisted of 3.04 persons. With respect to poverty, 11.3% of families (down from 12.2% in 1990) and 13.8% of individuals earned below the official U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9). In 2000, 47.4% of all families (of any size) earned less than \$35,000 per year.

In 2000, Newport News had a total of 74,117 housing units, of which 94.0% were occupied and 50.7% were detached one unit homes. Only 5.2% of these homes were built before 1940. Mobile homes, boats, RVs and vans accounted for 2.1% of the total housing units; 93.0% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$96,400. Of vacant housing units, 5.1% were used for seasonal, recreational, or occasional use. Of occupied units 47.6% were renter occupied.

⁶ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

Government

The City Manager and City Council govern Newport News. The City Manager oversees administration and day to day business of the city government. The city employs over 2,500 people and has a \$554 million budget (City of Newport News nd).

Fishery involvement in government

The Virginia Marine Resources Commission (VMRC) is a State Agency established in 1875 to preserve Virginia's marine and aquatic resources, including all tidal waters. The VMRC's Fisheries Management Division aids in the planning of state, interstate, and federal management organizations. Its Fisheries Advisory Council helps agencies create and implement management plans for both commercial and recreational fishery species. The Commission's headquarters are located in Newport News (VMRC nd).

There are committees that advise the Commission on the needs and utilization of the recreational and commercial fisheries for blue crab, clam, finfish, and shellfish. Only the Shellfish Management Advisory Committee has a member who is Newport News resident. Also, there are committees to advise the Commission on spending the Marine Fishing Improvement Fund which is derived from commercial license fees. There is also the Saltwater Recreational Fishing Development Fund which is derived from recreational license fees.⁷ The latter recreational fishing advisory committee has one member who is a resident of Newport News. There are also committees that advise on the marine fish citation program and on the needs and utilization of intertidal and aquatic habitat in Virginia (VMRC nd).

Institutional

Fishing associations

At the federal commercial level, there are no apparent active fishery associations in the Hampton Roads area. At the State level, there are several regional "Waterman's" Associations, formed generally to address specific regulations being considered by the VMRC. These associations focus primarily on Chesapeake Bay fisheries.⁸

There are two sportfishing associations in Newport News. The Peninsula Saltwater Sportfishermen Association (PSSA) represents fishermen from the entire Virginia Peninsula and has about 400 members (2007).⁹ The Virginia Coastal Conservation Association's (CCA) local Newport News chapter has many of the same members as the PSSA.¹⁰ Barbara Stevenson's list of fisheries organizations reports two in Newport News: James River Watermen's Association and Virginia Marine Products Board, a division of the state Department of Agriculture responsible for promoting Virginia's seafood products (Stevenson nd).

Fishing assistance centers

The Virginia Department of Game and Inland Fisheries administers the sale of saltwater recreational fishing licenses, while the VMRC administers the Saltwater Recreational Fishing

⁷ Community Review Comments, Jack Travelstead, Virginia Marine Resource Committee, Fisheries Management Division, 2600 Washington Ave., 3rd Floor, Newport News, VA 23607, September 18, 2007

⁸ Personal Communication, David Ulmer, NOAA Port Agent, P.O. Box 69043, Hampton, VA 23669, (David.Ulmer@noaa.gov), July 21, 2006

⁹ Community Review Comments, Jack Travelstead, Virginia Marine Resource Committee, Fisheries Management Division, 2600 Washington Ave., 3rd Floor, Newport News, VA 23607, September 18, 2007

¹⁰ Personal communication, Sonya Davis, Virginia Marine Resources Commission, Fisheries Management Division, 2600 Washington Ave., 3rd Floor, Newport News, VA 23607, 757-247-2200, 6/9/05

Development Fund. A Board decides biennially how to allocate the funds. This fund has contributed towards increasing public access, improving boat ramps, and the annual Children's Fishing Clinic (see "Cultural Attributes" section). Some of the funds also go to the Virginia Institute of Marine Science (VIMS) research projects focusing on recreational fishing.¹¹

Other fishing-related organizations

The Virginia Seafood Council is a professional trade organization consisting primarily of the state's shellfish growers and processors. The Council is registered as a lobby group in Richmond but is located in Newport News and represents the whole state (Virginia Marine Products Board nd). The Coastal Conservation Association (CCA) operates a state chapter out of Virginia Beach, VA. The CCA is a non-profit organization aiming to education the public about marine conservation, whose members are primarily saltwater anglers (Coastal Conservation Association nd).

Physical

Newport News is situated on a peninsula extending out into a portion of the Chesapeake Bay, about 180 miles from Washington D.C between Williamsburg and Virginia Beach. The town is located within easy access of the Hampton Roads Belt (Interstate 664) and the James River Bridge (Route 17) which cross over the Bay. The Williamsburg/Newport News airport is located in the city. There are also two international airports located nearby (Norfolk International and Richmond International Airports) (Google nd). Amtrak provides passenger railway service in and out of Newport News. This city has transportation systems by air, road, railway, and water (Newport News Tourism Development Office nd). Many of the fishing-related businesses are located in the Newport News Seafood Industrial Park (NNEDA nd).

A variety of public access sites are available for recreational fishing. The pier at Denbigh Park is available daily for saltwater fishing, and fresh water fishing on shore or with private or rental boats is available at Lee Hall and Harwood's Mill Reservoirs. Leeward Marina offers 200 slips for private recreational vessels of up to forty three feet in length (NNDPRT nd).

INVOLVEMENT IN NORTHEAST FISHERIES¹²

Commercial

While the commercial fishing data in this profile is specific to Federal fisheries, according to the VA Marine Resource Commission, there are 33 state registered commercial fishermen that reside in Newport News, most of whom are involved in crab potting, clamming, oystering, and gillnetting.¹³ There are five bait and tackle stores, 12 fish and seafood markets,

¹¹ Personal communication, Sonya Davis, Virginia Marine Resources Commission, Fisheries Management Division, 2600 Washington Ave., 3rd Floor, Newport News, VA 23607, 757-247-2200, 6/9/05

¹² In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

¹³ Community Review Comments, Jack Travelstead, Virginia Marine Resource Committee, Fisheries Management Division, 2600 Washington Ave., 3rd Floor, Newport News, VA 23607, September 18, 2007

and eight seafood wholesale and processing plants in Newport News, indicating a demand coming from the fishing industry. “Because of problems with Oregon Inlet, many seafood dealers have moved their marketing and processing operations from Wanchese to the Newport News/Hampton Roads region, both expanding their seafood buying capabilities and creating more integrated linkages between the two landing centers.”

There are ten state licensed seafood buyers in Newport News.¹⁴ There are also several large seafood processing plants in Newport News (Virginia Marine Products Board, Virginia Seafood Suppliers Directory nd), two of the largest are [Chesapeake Bay Packing](#), specializing in scallops and conch, and [Icelandic USA, Inc.](#), “the largest importer of frozen groundfish for the foodservice industry in the U.S.” There are several other processing plants, wholesalers, and packing houses located in the Newport News Seafood Industrial Park (NNEDA nd).

The species with the highest dollar value landings in Newport News was scallops, with over \$26 million for the 1997 and 2006 average. Other significant landings included “Other” species, worth close to \$2 million, and summer flounder, scup, and black sea bass with \$1.3 million in landings during the same time period. Other significant landings in Newport News were red crab, monkfish, and dogfish as well as a wide range of other species (see Table 1). The number of vessels whose home port and whose owner’s city was Newport News generally increased between 1997 and 2006, ranging from 11 to 29 boats and 6-19 boats, respectively. The level of fishing home port value varied widely, from \$2 million to over \$25 million, while the level of fishing landed port value showed substantial increase from over \$15 million in 1997 to over \$53 million in 2004, declining again in 2005 and 2006 (see Table 2).

Landings by Species

Table 1. Dollar value of Federally Managed Groups of landings in Newport News

	Average from 1997-2006	2006 only
Scallop	26,503,063	23,315,283
Other¹⁵	1,938,247	457,587
Summer Flounder, Scup, Black Sea Bass	1,299,688	1,085,575
Red Crab	198,726	CONFIDENTIAL
Monkfish	160,878	41,810
Dogfish	39,973	76
Squid, Mackerel, Butterfish	18,961	1,654
Bluefish	5,966	3,178
Skate	4,244	0
Largemesh Groundfish¹⁶	2,280	0
Lobster	324	0
Smallmesh Groundfish¹⁷	151	0

Tilefish and herring are also landed, but data cannot be reported due to confidentiality

¹⁴ Community Review Comments, Jack Travelstead, Virginia Marine Resource Committee, Fisheries Management Division, 2600 Washington Ave., 3rd Floor, Newport News, VA 23607, September 18, 2007

¹⁵ “Other” species includes any species not accounted for in a federally managed group

¹⁶ Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

¹⁷ Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

Vessels by Year¹⁸

Table 2. All columns represent vessel permits or landings value combined between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port (\$)	Level of fishing landed port (\$)
1997	11	9	2,652,367	15,194,635
1998	15	9	3,924,764	15,945,730
1999	16	6	8,904,712	19,190,220
2000	21	9	13,055,962	26,514,096
2001	20	11	13,598,770	29,745,272
2002	22	15	17,005,061	34,434,618
2003	24	15	16,431,790	38,385,487
2004	25	15	23,117,273	53,682,646
2005	29	19	25,565,816	43,645,426
2006	27	14	25,012,006	24,987,238

(Note: # Vessels home ported = No. of permitted vessels with location as homeport

Vessels (owner's city) = No. of permitted vessels with location as owner residence¹⁹

Level of fishing home port (\$) = Landed value of fisheries associated with home ported vessels

Level of fishing landed port (\$) = Landed value of fisheries landed in location)

Recreational

There are many businesses in Newport News that serve recreational boaters and fishermen, which could indicate a substantial dependency on the recreational fishing industry. These include boat dealers (20), boat cleaning services (2), boat repair (15), canoe and kayak dealers (1), marine engine repair (2), marine propeller repair (1), marine supplies and equipment (14), and retail outboard motors (4). There are also several charter fishing boats in the area. The James River Fishing Pier attracts fishermen from all over for fishing off the pier (Anon 2005).

Fish caught for recreation in Newport News include: black drum, bluefish, cobia, croaker, flounder, red drum, sea bass, spadefish, Spanish mackerel, spot, striped bass, tautog, trout and triggerfish.

In 2005, the economic impact generated by marine recreational fishing in Newport News was second highest in the state behind Virginia Beach. The total sales/economic activity for the Hampton Roads area was \$70,114,000, a cumulative income of \$39,189,000, and recreational fishing employed 999 people. In 2004, 20 % more marine recreational licenses were sold than in 1994 (Southwick Associates Inc. 2006).

The [Peninsula Salt Water Sport Fisherman's Association](#), based in Newport News, sponsors a variety of fishing tournaments throughout the year.

Subsistence

Information on the subsistence fishing in Newport News is either unavailable through secondary data collection or the practice does not exist. However, according to the Virginia

¹⁸ Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

¹⁹ The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

Marine Resource Commission, subsistence fishing is observed at local fishing piers or from the shoreline.²⁰

FUTURE

Between the years 2003-2005 in the Hampton Roads area, at least fifteen scallop vessels were sold to a New England processing company. Some fishermen see a trend where a few large companies are purchasing vessels, thus, creating a monopoly in the scallop industry. Concerns also exist that big business will squeeze small vessels out of the industry.²¹

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²⁰ Community Review Comments, Jack Travelstead, Virginia Marine Resource Committee, Fisheries Management Division, 2600 Washington Ave., 3rd Floor, Newport News, VA 23607, September 18, 2007

²¹ Personal communication, NOAA port agent George Mattingly, 1006N Settlers Landing Road, P.O. Box 69043, Hampton, VA 23669, 978 609-4150, May 12, 2006

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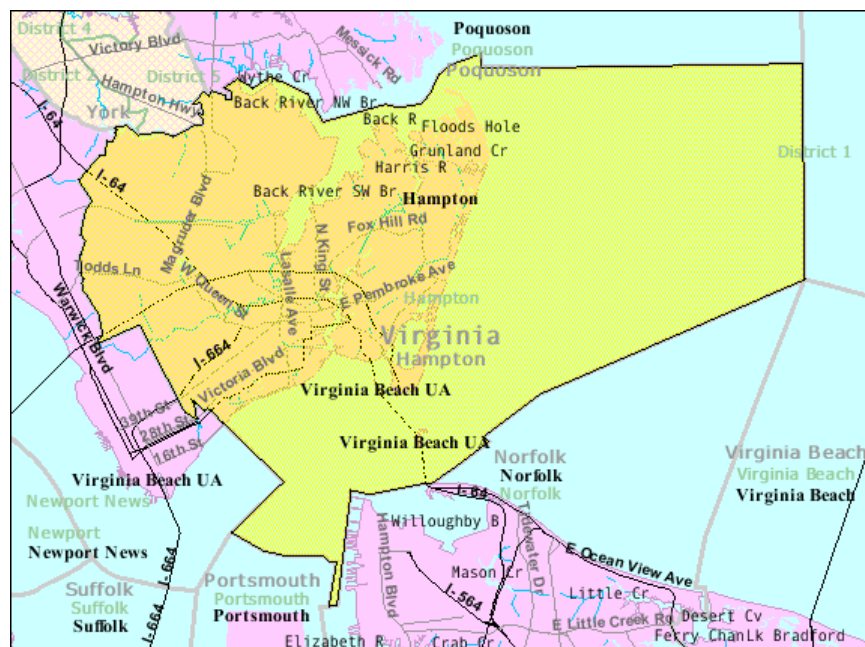
HAMPTON, VA¹

Community Profile²

PEOPLE AND PLACES

Regional orientation

Hampton, Virginia (37.03°N, 76.35°W) was initially situated in Elizabeth City; they merged in 1952. Hampton is situated on the southern shores of the state near the entrance to the James River (City of Hampton nd). Hampton is located near the confluence of Hampton Bay and Virginia Roads the end of a peninsula, with access to both the Chesapeake Bay and the Atlantic Ocean (Google 2007). Hampton is part of the Hampton Roads area, which also includes Newport News, Virginia Beach, and Norfolk, as well as a number of other cities and towns whose inclusion varies by source.³ Virginia Beach, Newport News, and Norfolk are all treated in separate community profiles.



Map 1. Location of Hampton, VA (US Census Bureau 2000)

Historical/Background

Hampton is an independent city, in the Virginia Beach-Norfolk metro area. The community was named after the Earle of Southampton in the 17th century. Hampton and the

¹ These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

² For purposes of citation please use the following template: “Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov.”

³ NOAA/NMFS in its Fisheries of the US defines Hampton Roads as Virginia Beach, Norfolk, Hampton, Newport News and Seaford (Liz Pritchard, Fisheries Statistics, Liz.Pritchard@noaa.gov). [Hampton Roads Transit](#) lists its destinations as Chesapeake, Hampton, Newport News, Norfolk, Portsmouth and Virginia Beach.

surrounding area is the oldest continuous English-speaking settlement in America. Englishmen were sent by the Virginia Company of London in 1607 and established Jamestown; in 1610 a fortification was built in an area that would become Hampton to settle the area and the first Africans and women arrived in 1619 (City of Hampton nd). In the eighteenth century, Hampton became a thriving port, with tobacco as a chief export and medium of exchange. The wealth of the colonies around Hampton's waterfront made the Virginia Coast an inviting target for pirates in the 17th century. The most notorious of pirates was Blackbeard; after he was killed in a pitched battle his head was placed in at the entrance of the river (Blackbeard Festival nd). In the late 1800's, Union General Benjamin Butler first applied the term "contraband" to three runaway slaves, establishing an avenue to freedom for African Americans throughout the South (City of Hampton 2007). Hampton is also known for having the first battle between two ironclad ships in 1862, the Confederate *Merrimack* (aka *Virginia*) and the Union's *Monitor* (Department of the Navy nd).

Demographics⁴

According to Census 2000 data, the city had a population of 146,437, up 9.5% from a reported population of 133,793 in 1990. Of this 2000 total, 49.6% were males and 50.4% were females. The median age was 34.0 years and 70.1% of the population was 21 years or older while 12.5% of the population was 62 or older.

The population structure of Hampton (see Figure 1) showed a large population in both 0-19 and 20-49 year old age groups and a rapid drop off in the 50-59 year old age group, likely indicating large numbers of young families. The largest category was males in the 30-39 age category. The number of females exceeds the number of males in Hampton in the younger age categories, with the exception of the 10-19 age category.

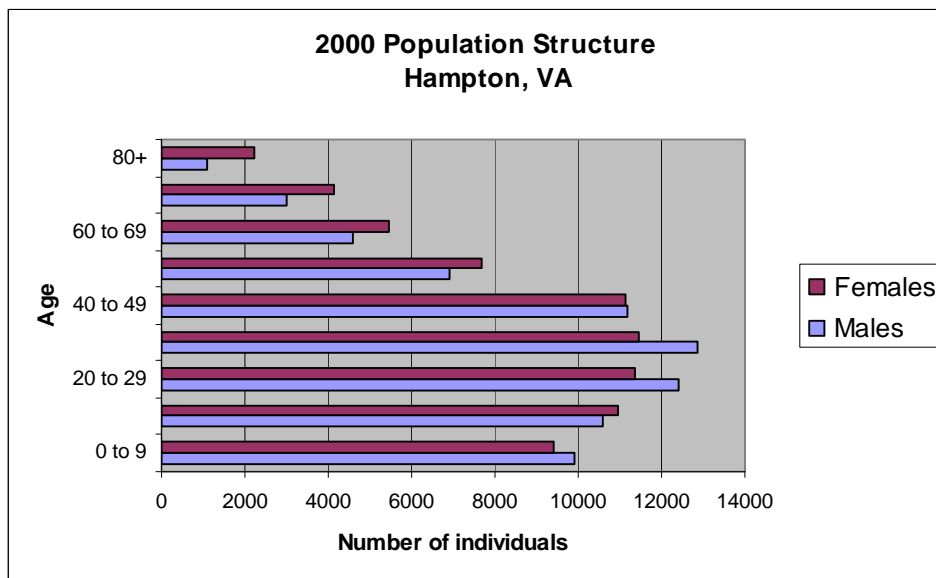


Figure 1. Hampton's population structure by sex in 2000 (US Census Bureau 2000)

⁴ While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

The majority of the population was white (77.0%), with 12.6% of residents black or African American, 0.9% Native American, 3.7% Asian, and 0.1 % Pacific Islander or Hawaiian (see Figure 2). Only 2.8% of the total population identified themselves as Hispanic/Latino (see Figure 3). Residents linked their backgrounds to a number of different ancestries including: German (9.0%), English (7.8%), United States or American (7.2%), and Irish (7.1%). With regard to region of birth, 46.9% were born in Virginia, 46.8% were born in a different state, and 2.4% were born outside the U.S. (including 1.7% who were not United States citizens).

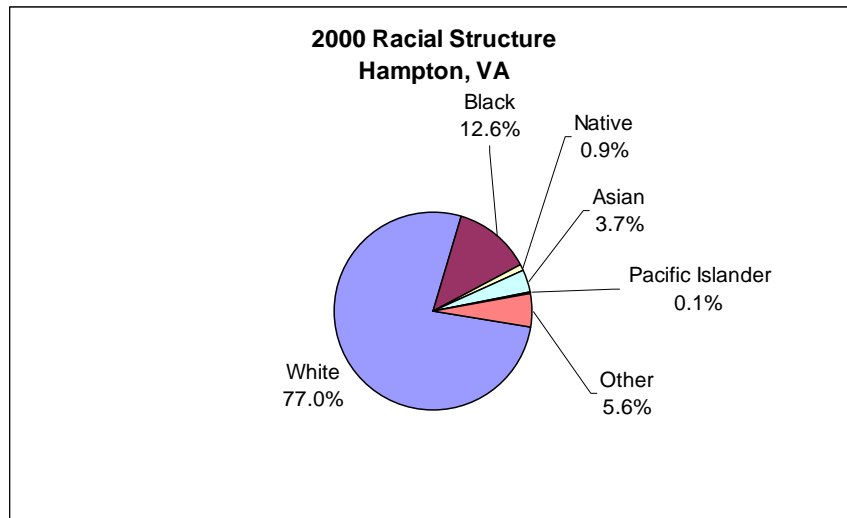


Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

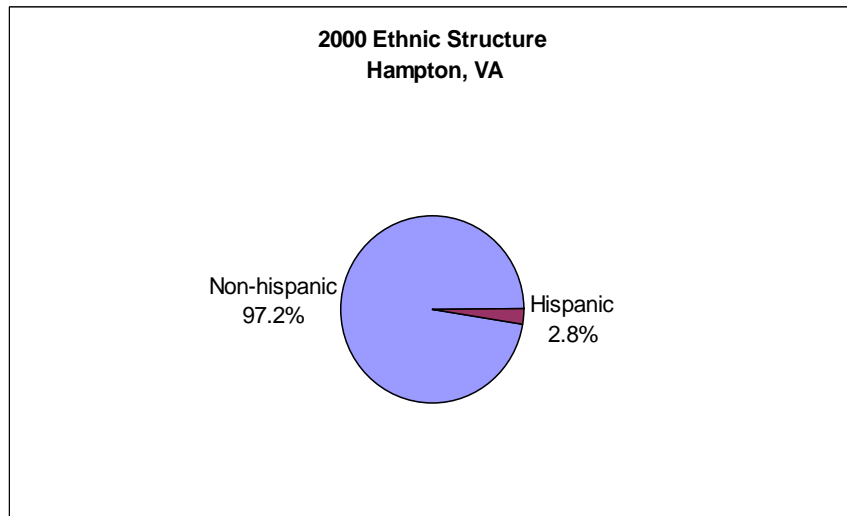


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 93.3% of the population, only English was spoken in the home, leaving 6.7% in homes where a language other than English was spoken, including 2.1% of the population who spoke English less than “very well” according to the 2000 Census.

Of the population 25 years and over, 85.5% were high school graduates or higher and 21.8% had a bachelor’s degree or higher. Again of the population 25 years and over, 4.1% did not reach ninth grade, 10.4% attended some high school but did not graduate, 28.0% completed

high school, 27.2% had some college with no degree, 8.6% received an associate's degree, 13.5% earned a bachelor's degree, and 8.3% received either a graduate or professional degree.

Although religion percentages are not available through the US Census, according to the Association of Religion Data Archives (ARDA) in 2000 the religion with the highest number of congregations and adherents in Hampton was Southern Baptist Convention with 21 congregations and 16,666 adherents. Other prominent congregations in the county were United Methodist (12 with 7,019 adherents), Catholic (5 with 5,217 adherents), and Assemblies of God (5 with 3,263 adherents). The total number of adherent to any religion was up 9.2% from 1990 (ARDA 2000).

Issues/Processes

In August 2005, the coastal fisheries commission in VA approved capping the catch of menhaden in the Chesapeake Bay to about 230 million pounds. This most strongly affects Omega Protein Corp., the nation's largest menhaden processor, which has warehouse facilities in Norfolk. Menhaden fuels one of Virginia's largest commercial fishing industries and is considered an abundant resource coast-wide but biologists are concerned about the decline of young fish over the past 15 years (Latane 2005). Crew turnover on trawlers is also an emerging problem (McCay and Cieri 2000).

In June 2007, the Mid-Atlantic Fishery Management Council held a meeting in Hampton. Among various topics on the agenda were: research set-asides, fishing vessel safety, bycatch considerations, and quota levels for squid, mackerel, and butterfish (Mid-Atlantic Fishery Management Council 2007).

Cultural attributes

Hampton celebrates the famous Caribbean pirate Blackbeard, through the [Hampton Blackbeard Festival](#) every year in June. The event features Tall Ships, re-enactments of important battles and a Grand Pirate Ball. Also featured is the annual Hooked on Hampton Fishing Tournament (Blackbeard Festival nd).

The Hampton History Museum on Old Hampton Lane, boasts a wide selection of permanent and changing exhibits highlighting Hampton's rich history. Of maritime interest is the Port Hampton exhibit, where visitors can walk through a simulated ship's hold with original and reproduction artifacts, including old hogshead barrels to illustrate the importance of tobacco in Hampton's trade and commerce past (City of Hampton nd).

The Downtown Hampton In-Water Boat Show is held at the Hampton Public Piers water front and showcases boats in and out of the water from many regional boat dealers. The Seafest, a large marine trade show, is held every September (City of Hampton nd). Also in September, the town celebrates its waterfront heritage with art, entertainment and the regional seafood with the annual [Hampton Bay Days](#) festival.

INFRASTRUCTURE

Current Economy

The largest employers in Hampton are: Lucent Technologies, Gateway Computers (may not be here), Canon, tourism, Langley Air Force Base and NASA are, drawing mostly on highly skilled labor (McCay and Cieri 2000).

According to the U.S. Census 2000⁵, 62.4% (71,790 individuals) of the total population 16 years of age and over were in the labor force (see Figure 4), of which 3.7% were unemployed, 5.8% were in the Armed Forces, and 52.8% were employed.

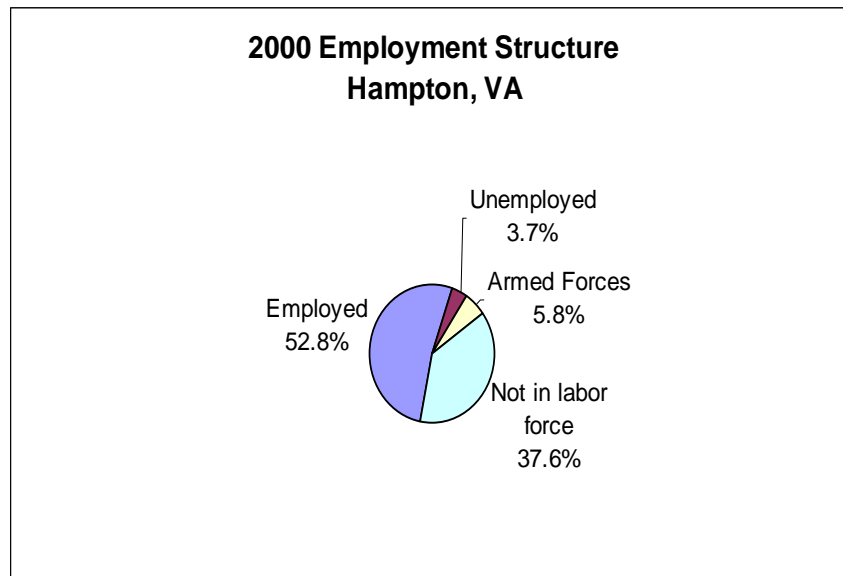


Figure 4. Employment structure in 2000 (US Census Bureau 2000)

According to the Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 208 positions or 0.3% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 2,237 positions or 3.7% of jobs. Educational, health and social services (20.4%), manufacturing (15.5%) and retail trade (13.0%) were the primary industries.

Median household income in Hampton was \$39,532 (up 15.3 % from \$34,291 in 1990 [US Census Bureau 1990]) and per capita income was \$19,774. For full-time year round workers, males made approximately 28.4% more per year than females.

The average family in Hampton in 2000 consisted of 3.02 persons. With respect to poverty, 8.8% of families (up from 2.5% in 1989 [US Census Bureau 1990]) and 11.3% of individuals earned below the official US Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239-35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 46.5% of all families of any size earned less than \$35,000 per year.

In 2000, Hampton had a total of 57,311 housing units, of which 94.0% were occupied and 64.1 % were detached one unit homes. Less than ten percent (7.4%) of these homes were built before 1940. Mobile homes, boats and RV's accounted for 1.8% of the total housing units; 93.5% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$91,100. Of vacant housing units, 0.5% were used for seasonal, recreational, or occasional use. Of occupied units, 41.4% were renter occupied.

⁵ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

Government

The Hampton City Council is composed of seven members, including an elected Mayor, and a Vice Mayor, who is selected by the Council after each election. Council members are elected to four-year terms in staggered elections in even years. The Council also appoints the City Manager, who is the chief administrator and executive officer of Hampton (City of Hampton nd).

Fishery involvement in government

NOAA Fisheries, Fisheries Statistics Office, has three port agents based in Hampton. Port agents sample fish landings and provide a ‘finger-on-the-pulse’ of their respective fishing communities (NOAA Fisheries Service nd).

The Virginia Marine Resources Commission (VMRC) is a State Agency established in 1875 to preserve Virginia’s marine and aquatic resources, including all tidal waters. The VMRC’s Fisheries Management Division aids in the planning of state, interstate, and federal management organizations. Its Fisheries Advisory Council helps agencies create and implement management plans for both commercial and recreational fishery species. The Commission’s headquarters are located in Newport News (VMRC nd).

Institutional

Fishing associations

At the federal commercial level, there are no apparent active fishing associations in the Hampton Roads area. At the State level, there are several local “watermen’s” associations, formed generally to address specific regulations being considered by the VMRC. These associations focus primarily on Chesapeake Bay fisheries.⁶ One such association (Working Waterman’s Association) has its Vice President from Hampton (VMRC nd).

Fishery assistance centers

Information on fishery assistance centers in Hampton is unavailable through secondary data collection.

Other fishing related institutions

The Coastal Conservation Association (CCA) operates a state chapter out of Virginia Beach, VA with activities in Hampton. The CCA is a non-profit organization aiming to educate the public about marine conservation. The CCA’s members are primarily saltwater anglers (Coastal Conservation Association nd).

Physical

Hampton is located south of Interstate Highway 64 along the Hampton River. Hampton is located approximately 30 miles from Virginia Beach, 30 miles from Historic Williamsburg, 17 miles from Norfolk and 7 miles from Newport News. Hampton is 3 miles from Langley Air Force Base, 11 miles from Newport News/Williamsburg International Airport, and approximately 14 miles from Norfolk International Airport. There are Amtrak stations in both

⁶ Personal Communication, David Ulmer, NOAA Port Agent, P.O. Box 69043, Hampton, VA 23669, (David.Ulmer@noaa.gov), July 21, 2006

Newport News (7 miles) and Norfolk (14 miles) (Google nd). The [Hampton Roads Transit \(HRT\)](#) provides public transportation service throughout the Hampton Roads area.

Hampton's extensive waterfront offer access to multiple marinas (City of Hampton, Virginia, Hampton Marinas nd.), including the Salt Ponds Marina Resort which is one of the largest on the Chesapeake Bay, providing storage for boats up to 80 feet long and a wide range of marina services. The Intercoastal Waterway also flows through Hampton, accommodating various types of boat traffic (City of Hampton nd). [Hampton Marine Services](#) offers parts and services for different vessel types and has been in business for over 20 years. On the west side of the Hampton River near downtown is a large working wharf with numerous yachting centers (Downtown Hampton Development Partnership nd).

INVOLVEMENT IN NORTHEAST FISHERIES⁷

Commercial

The top three species landed in Hampton (see Table 1) by value were sea scallops, "other," and summer flounder, scup, and black sea bass. Sea scallops values far exceeded any other species landings in Hampton. Blue crab is a state managed species, so landings values are not shown in Table 1 but may be significant in Hampton. In addition, menhaden is one of Virginia's largest commercial fisheries, with 58% of the total coast-wide harvest from 1996 to 2004 coming from the Chesapeake Bay. In 2004, commercial menhaden landings generated about \$24 million for the Virginia economy and about 395 full time jobs (Southwick Associates Inc. 2006).

Sea-scalloping with dredges is the most important fishery by value, although a significant portion of scallops are caught out of Hampton using otter trawl vessels. The landing value of scallops in 2006 was more than double the 1997-2006 scallop landings average.

The diversity of species landed in Hampton is high, as is the types of gear used. These gear types include: handlines, haul seines, pound nets, sink gillnets, pots, patent tong for hard clams, as well as the popular scallop dredge and otter trawls. There is also a small amount of pelagic longlining occurring from Hampton, targeting various sharks and tuna. In 1999, two or three boats in Hampton had Vietnamese owners, captains and crew. Crab picking and oyster shucking, once important trades, are now supported by only one crab house (McCay and Cieri 2000).

The number of vessels home ported and the number of vessels whose owner lives in Hampton (see Table 2) has stayed relatively consistent from 1997 to 2003, after which there is a decline in vessels through 2006.

⁷ In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

Landings by Species

Table 1. Rank Value of Landings for Federally Managed Groups

Species	Rank Value of Average Landings from 1997-2006
Scallop	1
Other ⁸	2
Summer Flounder, Scup, Black Sea Bass	3
Squid, Mackerel, Butterfish	4
Monkfish	5
Bluefish	6
Herring	7
Lobster	8
Largemesh Groundfish ⁹	9
Dogfish	10
Skate	11
Smallmesh Groundfish ¹⁰	12
Tilefish	13

(Note: Only rank value is provided because value information is confidential in ports with fewer than three vessels or fewer than three dealers, or where one dealer predominates in a particular species and would therefore be identifiable.)

Vessels by Year¹¹

Table 2. Federal Vessel Permits Between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)
1997	14	30
1998	11	30
1999	11	30
2000	11	31
2001	10	29
2002	11	35
2003	7	27
2004	8	29
2005	6	31
2006	10	22

(Note: # Vessels home ported = No. of permitted vessels with location as homeport, # Vessels (owner's city) = No. of permitted vessels with location as owner residence¹²)

⁸ "Other" species includes any species not accounted for in a federally managed group

⁹ Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

¹⁰ Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

¹¹ Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

¹² The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

Recreational

In 2005, the economic impact generated by marine recreational fishing in Hampton was third highest in the state, next to Virginia Beach and Newport News. The total sales/economic activity for Hampton was \$53,275,000, a cumulative income of \$30,639,000, and recreational fishing employed 757 people. In 2004, 20 % more marine recreational licenses were sold than in 1994 (Southwick Associates Inc. 2006). There are numerous sport fishing operations and dealers in Hampton. Most businesses offer sight seeing tours on the water in addition to chartered fishing trips. Vessels fish mostly in the Lower Chesapeake Bay and Hampton Roads, usually targeting bottom fish such as croaker, trout, bluefish, and flounder (Hampton Roads Charters Inc. nd).

Subsistence

Information on subsistence fishing in Hampton is either unavailable through secondary data collection or the practice does not exist.

FUTURE

There is pressure by developers to use dock space for tourist-related infrastructure (McCay and Cieri 2000). Also, during the 2003-2005 in the Hampton Roads area at least fifteen scallop vessels were sold to a New England processing company. Some fishermen see a trend where a few large companies are purchasing vessels, thus, creating a monopoly in the scallop industry. Concerns also exist that big business will squeeze small vessels out of the industry.¹³

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WANCHESE, NC¹

Community Profile²

PEOPLE AND PLACES

Regional orientation

The village of Wanchese (35.8°N, 75.6°W) is located on Roanoke Island in North Carolina's Outer Banks (USGS 2008). It is 68 miles from Elizabeth City, NC and roughly 100 miles from the Norfolk/Virginia Beach/Hampton area in Virginia (MapQuest nd).



Map 1. Location of Wanchese, NC (US Census Bureau 2000)

Historical/Background

Wanchese is located on Roanoke Island, famous for its role in American History as the site of the first attempt (ultimately a failed attempt) at European settlement in the New World. The settlement of 117 men, women, and children sent here by Queen Elizabeth I and Sir Walter Raleigh in the late 1500s disappeared without a trace, and became known as the Lost Colony, a mystery which has yet to be solved. Wanchese and Manteo are named for two Native Americans who were brought back to England from a 1584 expedition to the island (ICW-NET nd). Archeological exploration of Wanchese found large piles of shells, indicating that the area's early Native American residents were harvesting oysters and other shellfish, and probably fish, from the waters around Roanoke Island long before European settlers established a tradition of

¹ These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

² For purposes of citation please use the following template: "Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov."

fishing here (Carolina Algonkian Project 2002). The English colonists who settled here were also very dependent upon harvesting marine species (Stoffle nd). Today Wanchese is advertised to tourists as a quaint fishing village where visitors can watch the fish come in to port and be shipped around the world (Outer Banks Visitors Bureau nd).

Demographics³

According to Census 2000 data⁴, Wanchese had a total population of 1,527, up 10.6% from the reported population of 1,380 in 1990 (US Census Bureau 1990). Of this 2000 total, 50.7% were male and 49.3% were female. The median age was 37.2 years and 73.0% of the population was 21 years or older while 15.0% was 62 or older.

Wanchese's age structure (see Figure 1) shows a dip in the number of 20-29 year olds, indicating that many people may leave town for college or in search of employment around this age, characteristic of many fishing towns.

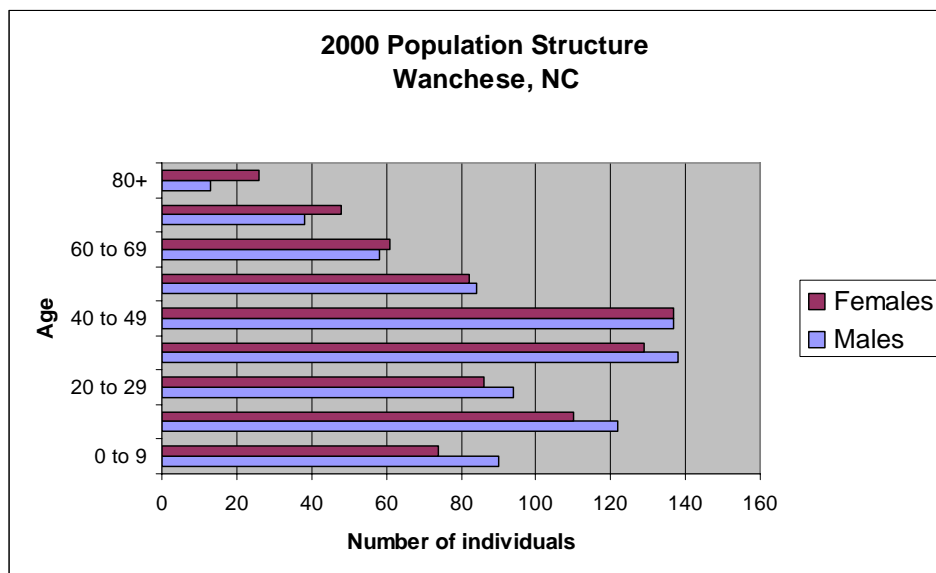


Figure 1. Wanchese's population structure by sex in 2000 (US Census Bureau 2000)

The majority of the population was white (98.5%), with 0.3% of residents black or African American, 0.1% Asian, 0.6% Native American, and none Pacific Islander or Hawaiian (see Figure 2). Only 1.8% of the population identified themselves as Hispanic/Latino (see Figure 3). Residents linked their backgrounds to a number of different ancestries including: English (23.6%), Irish (14.8%), and German (11.8%). With regard to region of birth, 55.6% were born in North Carolina, 42.6% were born in a different state and 1.2% were born outside of the U.S. (including 1.2% who were not United States citizens).

³ While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

⁴ These and all census data, unless otherwise referenced, can be found at U.S. Census: American Factfinder 2000 (<http://factfinder.census.gov/home/saff/main.html>); census data used are for Wanchese CDP (cited July 2007)

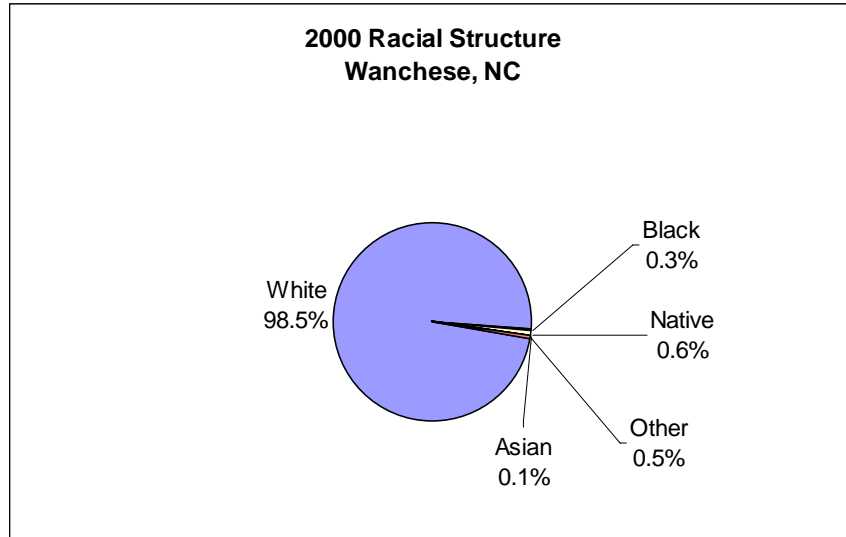


Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

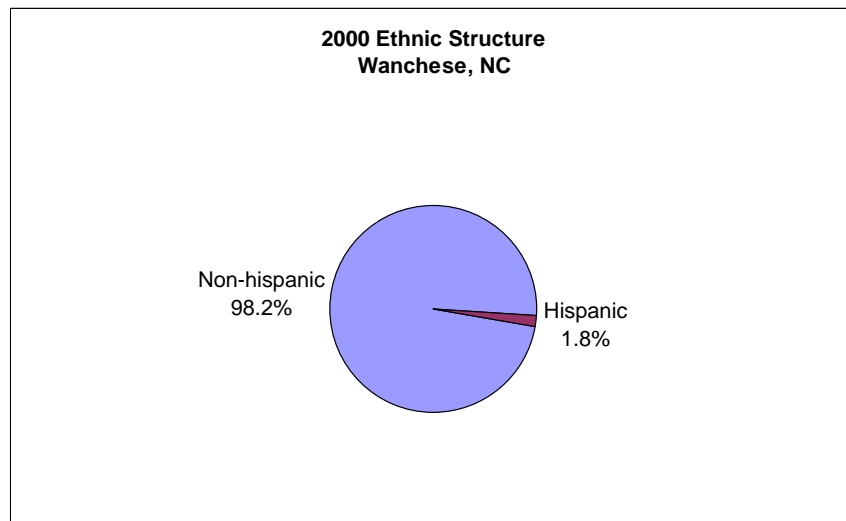


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 98.8% of the population, only English was spoken in the home, leaving 1.2% in homes where a language other than English was spoken, and including none of the population who spoke English less than “very well” according to the 2000 Census.

Of the population 25 years and over, 76.5% were high school graduates or higher and 16.2% had a bachelor’s degree or higher. Again of the population 25 years and over, 4.5% did not reach ninth grade, 19.0% attended some high school but did not graduate, 36.0% completed high school, 20.5% had some college with no degree, 3.8% received an associate’s degree, 11.6% earned a bachelor’s degree, and 4.5% received either a graduate or professional degree.

Although religion percentages are not available through the U.S. Census, according to the Association of Religion Data Archives in 2000, the religion with the highest number of congregations and adherents in Dare County was Methodist with 14 congregations and 4,686 adherents. Other prominent congregations were Catholic (4 with 2,097 adherents), Assembly of God (8 with 1,184 adherents), and Southern Baptist Convention (6 with 1,783 adherents). The total number of adherents to any religion was up 32.9% from 1990 (ARDA 2000).

Issues/Processes

For the last 43 years, the Army Corps of Engineers has been continuously dredging a channel at the entrance to Oregon Inlet, which connects the Roanoke Sound with the Atlantic Ocean. The Oregon Inlet receives heavy vessel traffic as it is the only navigable inlet between Cape Henry, Virginia and Hatteras Inlet, North Carolina, and it is commonly used by commercial fishing vessels from North Carolina and from other states (NCFA 2002). However, traveling the inlet can be dangerous; most vessels have to wait for high tide to pass, and a trawler was lost here in 1981. Some people argue that the Corps is fighting a losing battle against nature in dredging the Inlet. But without dredging, an important port would be lost (NCSG 2001) which could have a negative effect on many area businesses (Dare County nd). Some vessels from Wanchese now fish out of Hampton Roads, Virginia because of the danger involved with passing through the Inlet (Stoffle nd). The Corps received authorization in 1970 to construct two jetties alongside the inlet to stabilize the shifting sands and to dredge a channel through Roanoke Sound, making passage in and out of Wanchese safer for commercial fishing vessels as well as recreational boats, but as of 2002, this project had yet to be completed due to a variety of objections and proposed alternative plans (NCFA 2002). The construction of the jetties has been highly controversial, opposed by environmentalists and others who believe changing the dynamics of this poorly-understood estuary will have negative consequences (NCSG 2001). In April 2005, the Army Corps of Engineers announced it would discontinue its regular dredging of Oregon Inlet because of federal budget cuts (AP 2005).

The Wanchese Seafood Industrial Park has been controversial since it was built in 1979, and many fishermen opposed it. It was originally supposed to house a processing plant as well as a restaurant and cannery, but the facilities were never built. The park opened itself to marine related businesses, and has seen a boom in boatbuilding at the facility (NCSG 2001).

Crab fishermen along North Carolinas eastern coast have also seen an increase in competition from the global market, with an influx of imported crab meat from around the world. Many local Crab processors are unable to compete and are losing profit (NCSG 2002).

Cultural attributes

The Dare County Parks and Recreation Department runs a fishing school for children during the summer months as well as a fishing tournament for children (Dare County Parks & Recreation nd). The [North Carolina Maritime Museum](#) on Roanoke Island in neighboring Manteo is dedicated to the region's maritime history and includes exhibits on early commercial shad fishing and an old shad fishing vessel. Until recently, Wanchese held a blessing of the fleet and seafood festival (Stoffle nd), but it seems these activities no longer exist here.

INFRASTRUCTURE

Current Economy

The Wanchese Seafood Industrial Park houses a number of businesses, many of which are related to fishing or other marine industries and are family-run operations. In 2001 Davis Boatworks was the largest employer in the park, employing 180 people (NCSG 2001), but was recently bought by a larger New Jersey company and moved to New Jersey. Another boatbuilder, Scully Boatbuilders, moved into the facility previously occupied by Davis Boatworks (NCWaterways.com 2003), and the former owner of Davis Boatworks has opened a [new boatbuilding](#). There is only one seafood dealer in the Seafood Industrial Park: O'Neals Sea

Harvest, a family-run business.⁵

There are three seafood businesses located outside the Seafood Industrial Park; Moon Tillet Fishing Company, Etheridge Seafood, and Wanchese Fish Company.⁶ The [Moon Tillet Fishing Company](#) in Wanchese, which is a processing, packing, and distribution facility located on the harbor, employs over 40 people in all areas of the operation.

According to the U.S. Census 2000⁷, 66.6% (799 individuals) of the total population 16 years of age and over were in the labor force (see Figure 4), of which 1.8% were unemployed, none were in the Armed Forces, and 64.8% were employed.

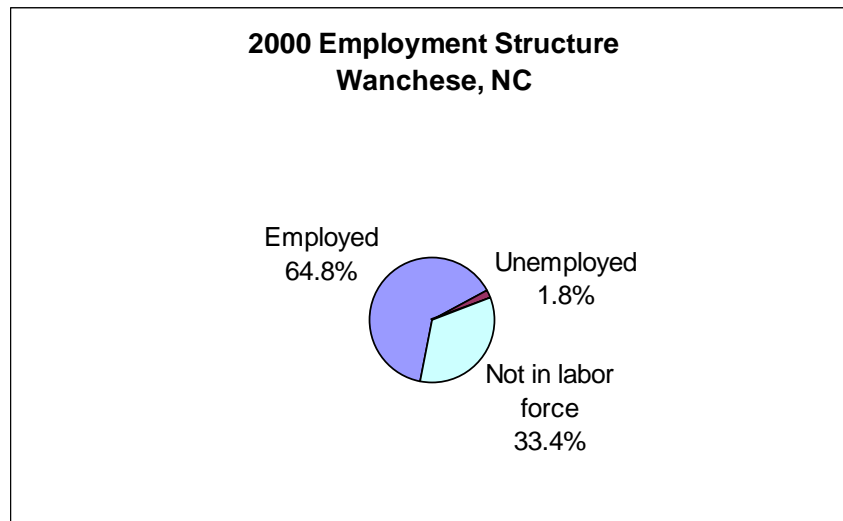


Figure 4. Employment Structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 64 positions or 8.2% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 128 positions or 16.5% of jobs. Education, health, and social services (22.0%), manufacturing (13.1%) and retail trade (11.7%) were the primary industries.

Median household income in Wanchese was \$39,250 (up 51.1% from \$25,977 in 1990 [US Census Bureau 1990]) and per capita income was \$17,492. For full-time year round workers, males made approximately 34.1% more per year than females.

The average family in Wanchese in 2000 consisted of 2.96 persons. With respect to poverty, 5.1% of families (down from 6.5% in 1990 [US Census Bureau 1990]) and 8.1% of individuals earned below the official U.S. Census poverty threshold. This threshold is \$8794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 46.5% of all families (of any size) earned less than \$35,000 per year.

In 2000, Wanchese had a total of 690 housing units, of which 89.0% were occupied and 67.4% were detached one unit homes. Less than ten percent (8.0%) of these homes were built

⁵ Community Review Comments, Beth Burns, Fisheries Biologist, North Carolina Division of Marine Fisheries, Wanchese Office, PO Box 539, Wanchese, NC 27981, October 3, 2007

⁶ Community Review Comments, Beth Burns, Fisheries Biologist, North Carolina Division of Marine Fisheries, Wanchese Office, PO Box 539, Wanchese, NC 27981, October 3, 2007

⁷ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

before 1940. Mobile homes, vans, and boats accounted for 31.5% of the total housing units; 98.6% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$104,900. Of vacant housing units, 7.1% were used for seasonal, recreational, or occasional use, while of occupied units 24.3% were renter occupied.

Government

Wanchese is still an unincorporated village within Dare County (NCSG 2001). The county is governed by a seven-member board of commissioners. They are elected in county-wide elections to serve four-year staggered terms. There is also a County Manager who is the chief administrative officer for the government. The county seat is in Manteo, six miles from Wanchese, also on Roanoke Island (Dare County nd).

Fishery involvement in the government

One of the twenty one voting members of the Mid-Atlantic Fishery Management Council (MAFMC) is from Wanchese. The Council is responsible for planning and decision making to carry out provisions of the Magnuson-Stevens Fishery Conservation and Management Act of 1976 (MAFMC nd). In addition, the North Carolina Department of Environment and Natural Resources, Division of Marine Fisheries has an active field office on Harbor Road in Wanchese, within the NC Seafood Industrial Park (NCDENR).

Institutional

Fishing associations

The North Carolina Fisheries Association has been supporting fishing families since 1952, with the goal “to celebrate and preserve commercial fishing families, heritage, and seafood” in North Carolina. This is achieved through lobbying federal, state, and local legislators and through public awareness projects. Several members of the Board of Directors are from Wanchese (NCFA nd).

Fishing assistance centers

Information on fishing assistance centers in Wanchese is unavailable through secondary data collection.

Other fishing related organizations

Information on other fishing related organizations in Wanchese is unavailable through secondary data collection.

Physical

Wanchese is located along Route 345, off Interstate Highway 64 which runs through Manteo and Rt. 345 provides the only land access to the village. Wanchese is 6 miles from the Dare County Regional Airport in Manteo, 192 miles from the Raleigh-Durham International Airport, and 100 miles from the Norfolk International Airport in Virginia (MapQuest nd).

Wanchese is home to the Wanchese Seafood Industrial Park, “the only Federal, State and County-financed project devoted entirely to the seafood processing and fishing industries” (Outer Banks Visitors Bureau nd), built to enhance fishing and marine-related industries in the area and to increase the area’s economic growth (NCDoc nd). The facility houses a number of businesses involved with building, repairing, and outfitting commercial fishing and sport fishing

vessels, as well as one company that sells seafood packaging (NCDoC nd).

The [Broad Creek Fishing Center](#), located within the NC Wanchese Seafood Industrial Park, is a full service marina for the sportfishing industry, with fishing gear and bait, and also houses a number of charter vessels. Many charter vessels are also docked at the [Thicket Lump Marina](#), which also has a bait and tackle shop. There is one public boat ramp in Wanchese operated by Dare County (Dare County nd).

INVOLVEMENT IN NORTHEAST FISHERIES⁸

Commercial

Wanchese appears to have a diversified fishing industry, based on a large number of species landed. Fishing operations here readily switch gear to target different species depending on availability and market demand. Gear and vessel types used include longlining, scallop dredges, gillnetting, otter trawling, and crab pots (Stoffle nd). The most valuable species grouping landed in Wanchese on average from 1997-2006, with an average value of \$7.7 million, is the “other” species grouping, which includes blue crab and Atlantic croaker, both important species in Wanchese. However, croaker is a federally managed obtained primarily from the ocean, where blue crabs are state managed and harvested from the interior waters of the state.⁹ The value of “other” landings in 2006 far exceeded the ten-year average value at close to \$10 million (see Table 1). Landings in the summer flounder, scup, and black sea bass grouping were also significant, and also exceeded the ten-year average, as did bluefish landings.

The level of landings in Wanchese increased in most years, from a low of \$6 million in 1997 to a high of \$15.8 million in 2004. The value of fishing for home-ported vessels increased steadily between 1997 and 2005, declining in 2006, with 2005 home port values more than four times the 1997 values. The number of vessels, while showing considerable variability, seems to have also increased, with a maximum of 54 in 2005 (see Table 2).

The [Moon Tillett Fishing Company](#) in Wanchese is one of the largest fishing and seafood trading operations in the Outer Banks. The company includes retail and wholesale sales and distribution, including importing and exporting fish, and processing both fresh and frozen seafood. O’Neal’s Sea Harvest, Inc. is a wholesale and retail distributor of fresh and frozen seafood (Outer Banks Visitors Bureau nd). They specialize in crabs and make crab pots as well (NCSG 2001). Other commercial dealers include Etheridge Seafood and Wanchese Fish Company which handle large volumes of fish.¹⁰

⁸ In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

⁹ Community Review Comments, Beth Burns, Fisheries Biologist, North Carolina Division of Marine Fisheries, Wanchese Office, PO Box 539, Wanchese, NC 27981, October 3, 2007

¹⁰ Community Review Comments, Beth Burns, Fisheries Biologist, North Carolina Division of Marine Fisheries, Wanchese Office, PO Box 539, Wanchese, NC 27981, October 3, 2007

Landings by Species

Table 1. Dollar value by Federally Managed Groups of landings in Wanchese

	Average from 1997-2006	2006 only
Other¹¹	7,679,033	9,620,101
Summer Flounder, Scup, Black Sea Bass	1,718,482	2,846,008
Bluefish	581,481	631,231
Monkfish	349,827	155,222
Scallop	338,145	136,774
Squid, Mackerel, Butterfish	155,286	162,475
Dogfish	66,619	396
Tilefish	10,291	38
Lobster	2,090	0
Skate	1,073	74
Largemesh Groundfish¹²	883	501
Smallmesh Groundfish¹³	56	0

Note: Herring are also landed, but data cannot be reported due to confidentiality.

Vessels by Year¹⁴

Table 2. All columns represent vessel permits or landings value combined between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port (\$)	Level of fishing landed port (\$)
1997	30	22	3,199,133	6,328,469
1998	29	17	3,866,523	8,906,794
1999	40	25	3,861,804	9,748,684
2000	47	32	5,316,849	13,907,486
2001	51	30	7,939,403	10,904,337
2002	46	28	7,772,627	9,307,889
2003	49	29	9,535,872	10,083,266
2004	47	31	11,950,292	15,780,765
2005	54	28	13,358,295	10,523,773
2006	52	33	11,314,873	13,552,820

(Note: # Vessels home ported = No. of permitted vessels with location as homeport

Vessels (owner's city) = No. of permitted vessels with location as owner residence¹⁵

Level of fishing home port (\$) = Landed value of fisheries associated with home ported vessels

Level of fishing landed port (\$) = Landed value of fisheries landed in location)

¹¹ "Other" species includes any species not accounted for in a federally managed group

¹² Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

¹³ Smallmesh multi-species : red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

¹⁴ Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

¹⁵ The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

Recreational

The Outer Banks area is known as “the billfish capital of the world” (Outer Banks Visitors Bureau nd), and recreational fishing is a billion dollar industry in North Carolina (Stoffle nd). The neighboring town of Manteo, also on Roanoke Island, has a marina that hosts a number of billfishing and other sportfishing tournaments throughout the year (Pirate’s Cove nd). There are also a number of marinas that have charter fishing vessels in Wanchese ([A-Salt Weapon Charters](#), [Broad Creek Fishing Center](#), [Thicket Lump Marina](#)). Some of the younger fishermen have switched from commercial fishing to charter fishing, which is a more profitable industry. Clamming used to be done commercially in the southern part of the state but is no longer done as a commercial activity. Instead it is generally done by families looking to take home clams to eat (Stoffle nd).

Subsistence

Information on subsistence fishing in Wanchese is either unavailable through secondary data collection or the practice does not exist.

FUTURE

As it becomes increasingly difficult to make a living from fishing in Wanchese, much of the village’s industry has shifted to boatbuilding, which has proved to be a profitable industry for many. However, many of the seafood packing and distribution houses in Wanchese are still in operation after several decades (NCSG 2001). The boatbuilding industry rarely employs past fishermen, instead relying on carpenters from home-building trades, and Mexican workers. The seafood packaging and distribution houses also hire predominately Mexican employees.¹⁶

Dare County has recently worked with residents to propose a zoning plan for Wanchese, which currently lacks zoning of any kind, to protect the character of the town by designating commercial, residential, and mixed-use districts for the town, including a marine commercial district (Virginian Pilot 2005).

In 2002 Will Etheridge III, owner of Etheridge Seafood, one of the oldest businesses in Wanchese, believed the fishing industry will be put out of business by environmentalists and recreational fishermen, and because the public was not aware of the commercial fishing industry. He claimed that he would not encourage his children or grandchildren to go into the seafood business (NCSG 2001). Some commercial fishermen see the industry as inevitably declining, and see charter fishing in the recreational fishing industry as a fallback way to make a living (Stoffle nd).

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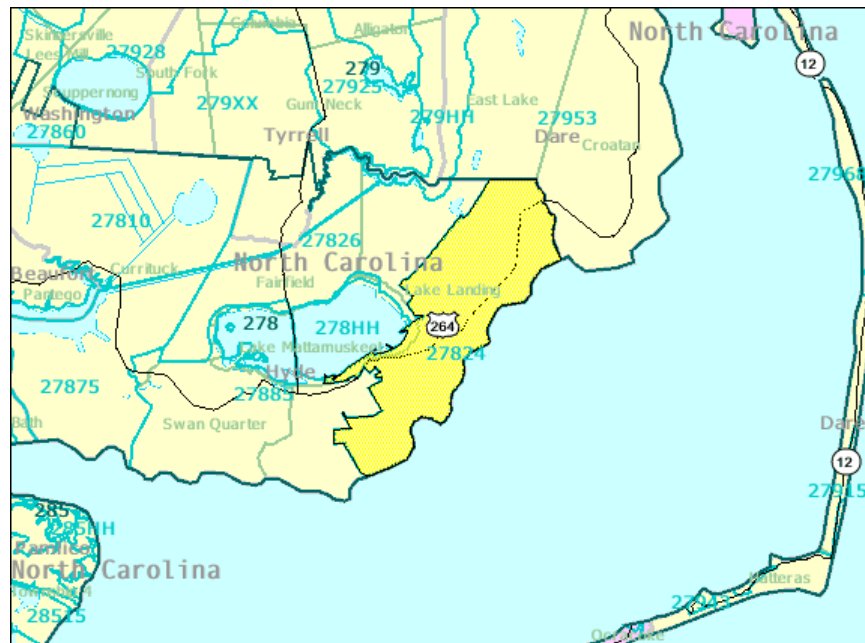
ENGELHARD, NC¹

Community Profile²

PEOPLE AND PLACES

Regional orientation

The village of Engelhard (35.51°N, 75.99°W) is surrounded by the Pamlico Sound and the Alligator and Pungo Rivers in the Northeast corner of North Carolina. There are three major National Wildlife Refuges in the area; Alligator River, Lake Mattamuskeet, and Swan Quarter Refuges.³ The village is in Hyde County and the deep waters surrounding Engelhard and its inlets, provide access to large fishing vessels (MapQuest 2007).



Map 1. Location of Engelhard, NC (US Census Bureau 2000)

Historical/Background

Engelhard was founded in 1711 and is home to the state's largest natural lake, Lake Mattamuskeet, and bisected by the Intracoastal Waterway. Engelhard was named for Chief Engelhard, a Native American of the area. The village is appropriately known as "the land of many waters". Ocracoke Island, once home to the pirate "Blackbeard", is now a busy tourist center and is only accessible by air or water (Hyde County NC 2007). Engelhard itself is named after the first publisher of a local newspaper, *Wilmington Paper*. Hyde County is one of the

¹ These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

² For purposes of citation please use the following template: "Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov."

³ Community Review Comments, Frank and Edna Summerlin, Big Trout Marina and Café, 17 Summerlin Drive, Engelhard, NC 27824, September 10, 2007

oldest counties in North Carolina, originally included in Bath County. In 1705, Bath County was divided into three precincts, one of them being "Wickham". In 1711, Wickham was changed to "Hyde", in honor of Edward Hyde, a moneyless cousin of Queen Anne who was made Colonial Governor of North Carolina (Albemarle-nc.com 2007). The timber logging industry introduced the need for a transportation system other than the horse or mule. Now nothing more than an overgrown path, the New Holland, Higginsport and Mt. Vernon Railroad once operated in the county (Albemarle-nc.com 2007).

Demographics⁴

According to Census 2000 data, Engelhard had a total population of 1,561, down 13.9% from the reported population of 1,814 in 1990 (US Census Bureau 1990). Of this 2000 total, 45.4% were males and 54.6% were female. The median age was 39.2 years and 71.2% of the population was 21 years or older while 19.7% was 62 years or older.

Engelhard's population structure (Figure 1) shows the highest percentage of the population is between 40 and 49 years of age. There is also a dip in the population between the ages of 20 and 29, indicating that many young people may be leaving the community to go to college or in search of jobs. Women outnumber men in every age category with the exception of 30-39, when men and women are nearly equal in number.

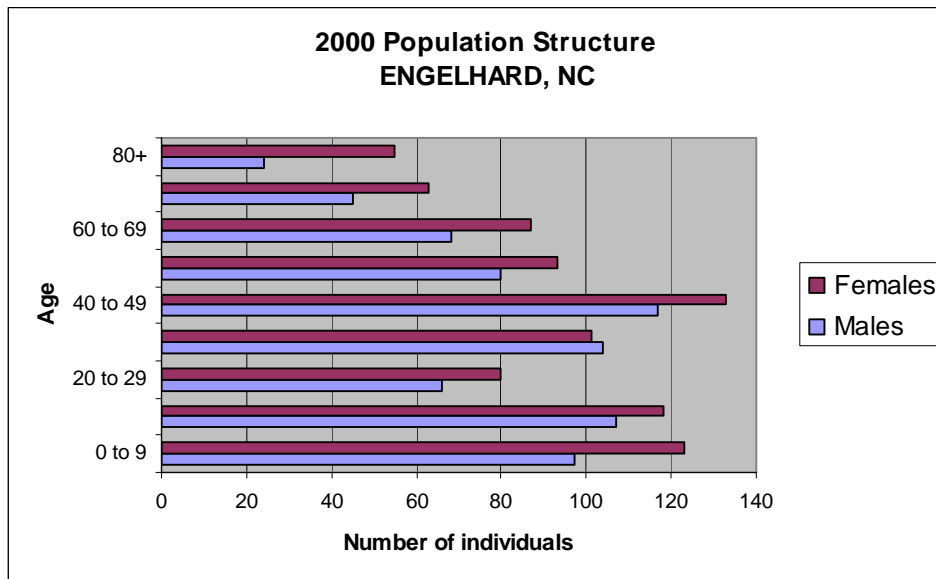


Figure 1. Engelhard's population structure by sex in 2000

The majority of the population was white (51.3%) with 47.3% of residents black or African American, 0.1% Asian, none Native American, and none Pacific Islander or Hawaiian (Figure 2). Only 3.7% of the population identified themselves as Hispanic/Latino (Figure 3). Residents linked their backgrounds to a number of different ancestries including: English (14.8%), Irish (4.6%), and various other ancestries recorded (46.2%). With the regard to region

⁴ While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

of birth, 86.1% were born in North Carolina, 13.0% were born in a different state and 0.9% were born outside of the U.S. (all of whom were not United States citizens).

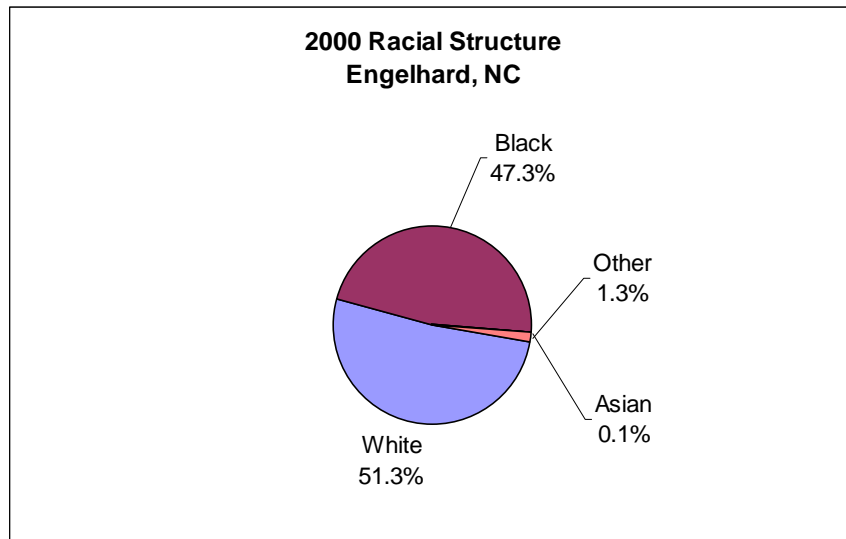


Figure 1. Racial Structure in 2000 (U.S. Census 2000)

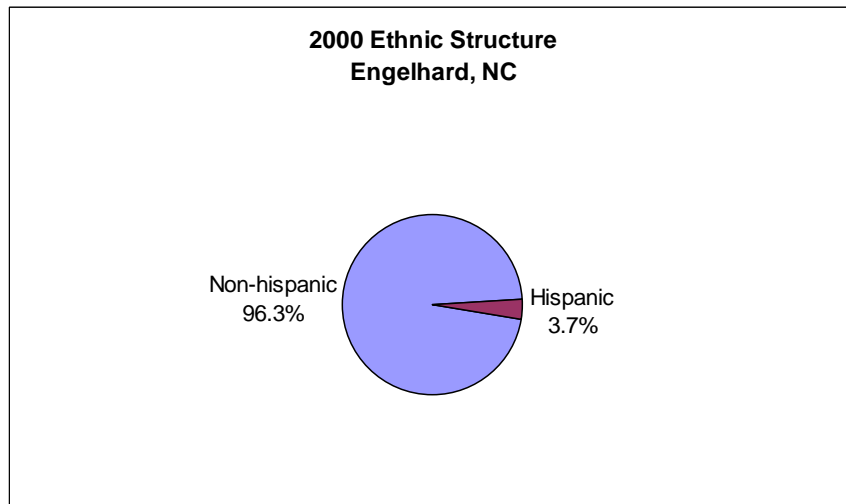


Figure 2. Ethnic Structure in 2000 (U.S. Census 2000)

For 96.3% of the population, only English was spoken at home, leaving 3.7% in homes where a language other than English was spoken, including 0.8% of the population who spoke English less than 'very well' according to the 2000 Census.

Of the population 25 years and over, 64.8 % were high school graduates or higher and 8.7 % had a Bachelor's degree or higher. Again of the population 25 years and over, 13% did not reach ninth grade, 4.5% attended some high school but did not graduate, 36.6% completed high school, 15.3% had some college with no degree, 6.2% received their Associate degree, 7.5% earned their Bachelor's degree, and 3.1% received either their graduate or professional degree.

Although religion percentages are not available through the U.S. Census, according to the Association of Religion Data Archives (ARDA) in 2000, the religion with the highest number of congregations and adherents in Hyde County was United Methodist with 680 adherents. Other

prominent congregations in the county were the Christian Church (3 with 367 adherents) and Churches of Christ (5 with 274 adherents). The total number of adherents to any religion was down 17% from 1990 (ARDA 2000).

Issues/Processes

Shrimp fishermen along the North Carolina coast have suffered because of decreasing prices of shrimp, resulting from an increase of foreign farmed shrimp on the market. North Carolina shrimp fishermen are working to promote their wild-caught shrimp to create a niche market and higher prices for their product (Sea Grant NC 2005). The North Carolina Division of Marine Fisheries was discussing minimum size limits for the shrimp that could be taken by trawlers, noting that foreign imports have cornered the market on small shrimp (Smith 2005).

Crab fishermen along North Carolina's eastern coast have also seen an increase in competition from the global market, with an influx of imported crab meat from around the world. Many local crab processors are unable to compete and are losing profit (Sea Grant NC 2002).

Cultural attributes

The Engelhard Blessing of the Fleet is led by the St. George's Episcopal Church in mid-May. This event is to honor and celebrate the hardships that are associated with commercial fishing. Songs and prayers are offered while fishing families unite along the shore and on their boats where they contemplate the dangers of commercial fishing (Hyde County Chamber of Commerce 2007).

[The Engelhard Seafood Festival](#) (May) is sponsored by Engelhard Development Corporation, a non-profit organization whose goal is to better the community of Engelhard. In its 18th year (May 2005), the festival featured music, vendors, historic displays and fresh seafood. The yearly festival is a great family outing and begins with a blessing of the fleet. Several titles are determined during the event, including "Little Miss", "Little Mister" and "Miss Engelhard Seafood".

INFRASTRUCTURE

Current Economy

The majority of residents of Engelhard make their living in farming or commercial fishing. There are numerous small businesses established in Engelhard, many of which cater to tourism, such as restaurants, hotels and inns (Albemarle-nc.com 2007).

According to the US Census 2000⁵, 40.6% (634 individuals) of the total population 16 years of age or over were in the labor force (Figure 4), of which 2.9% were unemployed, none were in the Armed Forces, and 49.5% were employed.

⁵ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

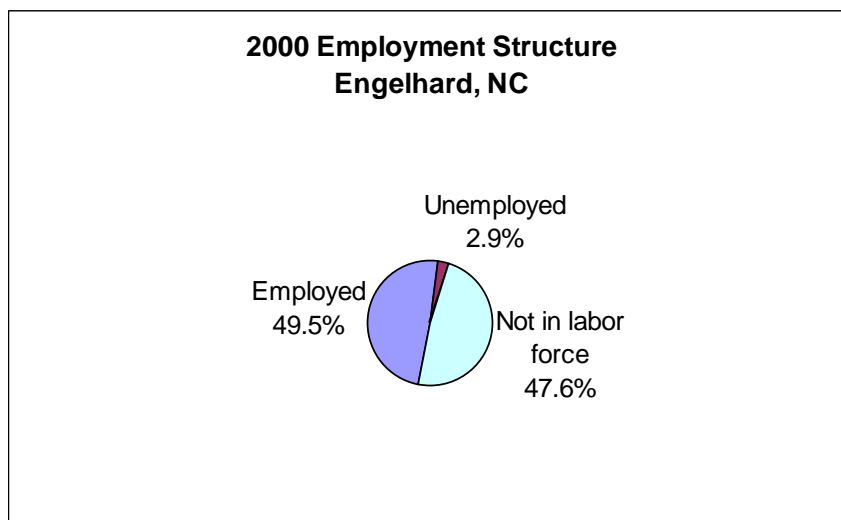


Figure 4. Employment structure in 2000 (US Census Bureau 2000)

According to the census 2000 data, jobs in the census grouping which includes agriculture, fishing, forestry, and hunting, and mining accounted for 82 positions or 13.9% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 17.2% of jobs. Education, health and social services (15.9%), manufacturing (12.4%) construction (12.2%), and retail trade (10.4%) were the primary industries.

Median household income in Engelhard was \$22,452 (up 32.7% from \$16,919 in 1990 [US Census Bureau 1990]) and median per capita income was \$15,062. For full-time year round workers, males made approximately 24.4% more per year than females.

The average family in Engelhard consisted of 3.1 persons. With respect to poverty, 8.7% of families (considerably less than 23.6% in 1990 [US Census Bureau 1990]) earn below the official US Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 42.3% of all families (of any size) earned less than \$35,000 per year.

In 2000, Engelhard had a total of 827 housing units of which 77.1% were occupied and 68.8% were detached one unit homes. Less than one quarter (21.3%) of these homes were built before 1940. Mobile homes accounted for 24.4% of housing units; 89.1% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$64,000. Of vacant housing units, 6.4% were used for seasonal, recreational, or occasional use. Of occupied units, 27.1% were renter occupied.

Government

Engelhard and the surrounding area were settled in the early 1700's. Engelhard, itself was incorporated as a village of Hyde County in 1711. The town is overseen by the Hyde County Board of Commissioners. The governing board is made up of 5 members (Hyde County NC 2007).

Fishery involvement in government

Information on fishery involvement in government in Engelhard is unavailable through secondary data collection.

Institutional

Fishing associations

[The North Carolina Fisheries Association](#) has been supporting fishing families since 1952, with the goal “to celebrate and preserve commercial fishing families, heritage, and seafood” in North Carolina. This is achieved through lobbying federal, state, and local legislators and through public awareness projects.

Fishing assistance centers

The Trade Adjustment Assistance for Farmers (TAA) program has provided business education to shrimpers in the state to assist them in recent changes in the market of shrimp, and also provided some training to shrimpers to exit the business if they chose (Sea Grant North Carolina 2005).

Other fishing related organizations

[The Mattamuskeet Foundation](#) is a nonprofit organization engaged in research and educational activities “to preserve, publish, and otherwise tell the stories of the rich history and ecology of Lake Mattamuskeet and the surrounding areas of eastern North Carolina”.

Physical

The village of Engelhard is surrounded by the Pamlico Sound and the Alligator and Pungo Rivers in the Northeast corner of North Carolina. Engelhard is located along one of North Carolina’s major highways, Highway 264 and is located just east of Hyde County airport and about 100 miles from the closest train station in Greenville, NC.⁶ The nearest airport of Engelhard is the Billy Mitchell Airport, 28.24 miles away. This Northeastern North Carolina village is home to North Carolina’s largest natural lake, Lake Mattamuskeet and bisected by the Intracoastal Waterway, appropriately known as “the land of many waters” (Albemarle-nc.com 2007).

Engelhard has some of the best facilities available to cruisers on the upper Pamlico’s western shoreline. The village has a well-marked channel with depths of at least seven feet, which has been dredged twice during the last several years (Albemarle-nc.com 2007). Engelhard has numerous private and public piers and boat ramps located throughout the community. There is one main marina located in Engelhard, Big Trout Marina, which offers both gas and diesel pumping stations, and has a number of slips to accommodate both large and small vessels (Albemarle-nc.com 2007).

⁶ Community Review Comments, Bethany Pugh, Shrimp Festival Organizer, Engelhard, NC, October 26, 2007

INVOLVEMENT IN NORTHEAST FISHERIES⁷

Commercial

Residents of Engelhard have always depended on a diversity of commercial fish species to support their economy. The most valuable species in Engelhard in 2006 was in the “Other” category, followed by summer flounder, scup, and black sea bass. The value of “other” species, which includes both shrimp and crab, was lower in 2006 than the ten year average, but the value of the category which includes summer flounder, scup, and black sea bass had increased (Table 1). The number of vessels home ported in Engelhard ranged between 9-18 vessels, while the number of vessels whose owner’s city was Engelhard was smaller and ranged between 4-11 vessels. The home port values generally increased over the ten year time period, while the level of fishing landed port fluctuated (Table 2).

Landings by Species

Table 1. Dollar value by Federally Managed Groups of landings in Engelhard

	Average from 1997-2006	2006 only
Other⁸	2,285,306	1,815,664
Summer Flounder, Scup, Black Sea Bass	760,867	1,390,315
Scallop	65,782	311,182
Dogfish	30,462	0
Bluefish	15,920	12,893
Monkfish	11,990	8,877
Squid, Mackerel, Butterfish	4,155	1,335
Tilefish	710	34
Largemesh Groundfish⁹	104	363
Smallmesh Groundfish¹⁰	5	0

⁷ In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

⁸ “Other” species includes any species not accounted for in a federally managed group

⁹ Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

¹⁰ Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

Vessels by Year¹¹

Table 2. All columns represent vessel permits or landings value combined between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port (\$)	Level of fishing landed port (\$)
1997	10	6	85,663	2,319,011
1998	9	5	194,341	2,662,993
1999	12	8	538,080	4,244,478
2000	18	10	1,266,726	5,380,961
2001	15	6	1,107,953	2,369,213
2002	11	4	1,086,010	3,458,701
2003	12	5	1,222,208	2,576,284
2004	15	7	1,511,966	2,775,047
2005	18	11	2,387,899	2,425,671
2006	14	9	2,267,551	3,540,663

Vessels home ported = No. of permitted vessels with location as homeport

Vessels (owner's city) = No. of permitted vessels with location as owner residence¹²

Level of fishing home port (\$) = Landed value of fisheries associated with home ported vessels

Level of fishing landed port (\$) = Landed value of fisheries landed in location

Recreational

Engelhard holds various recreational fishing tournaments and festivals throughout the fishing season. There are numerous businesses in Engelhard listed as charters that provide fishing rental gear. The shores and outer banks of Hyde County are known for its winter surf fishing. Large bluefish, striped bass, red drum, and speckled trout along with other species are available during this time of year. The area's northern beaches are popular spots for striper fishing during the winter months, and the southern beaches offer access to a number of recreationally fished species (NCDENR 2007).

Subsistence

Information on subsistence fishing in Engelhard is either unavailable through secondary data collection or the practice does not exist.

FUTURE

Engelhard continues to grow as a recreational fishing haven and tourist destination. The residents of Engelhard and Hyde County continue to appreciate and respect their deep fishing history and will continue to celebrate it with festivals and fairs for years to come.

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¹¹ Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

¹² The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

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ORIENTAL, NC¹

Community Profile²

PEOPLE AND PLACES

Regional orientation

The town of Oriental (35.03 N, 76.68 W) is located in Pamlico County, in the middle of North Carolina's coastline, along Pamlico Sound (USGS 2008). It is roughly 40 miles from Morehead City and 140 miles from Raleigh (MapQuest 2005). Oriental is 2.80 sq. km. in land area, and has another 0.56 sq. km. in surface water. It is set along with Neuse River among five creeks (Town of Oriental 2005).



Map 1. Location of Oriental, NC (US Census Bureau 2000)

Historical/Background

The first European colonists settled in what is now Pamlico County sometime around the early 1700s (Pamlico County 2005). Originally named Smith's Creek, the town was settled in the mid-1870s, and was later named Oriental after the nameplate of a steamer that had wrecked off the coast of Cape Hatteras. The town was officially incorporated in 1899 and from the early 1900s, the town's economy consisted of lumber, fishing, and farming (Town of Oriental 2005a). Oriental was once a bustling port city, serviced by two steamships and the railroad. The Great Depression, combined with the advent of the trucking industry, however, caused Oriental to

¹ These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

² For purposes of citation please use the following template: "Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov."

return once again to a quiet fishing village (Oesterreich 2004). Today Oriental is known as the “Sailing Capital of North Carolina;” the town has 875 people, but over 2,700 boats (Town of Oriental 2005).

Demographics³

According to Census 2000 data, Oriental had a total population of 875, up 8.8% from the reported population of 804 in 1990 (US Census Bureau 1990). Of this 2000 total, 49.1% were males and 50.9% were females. The median age was 57.2 years and 87.7% of the population was 21 years or older while 41.8% was 62 or older.

The age structure for Oriental (Figure 1) differs greatly from many other fishing communities. The town has an aging population, with few children and few young people. The most populous age bracket for both men and women is 70-79, and the second highest bracket for both is 60-69, indicating that Oriental functions largely as a retirement community.

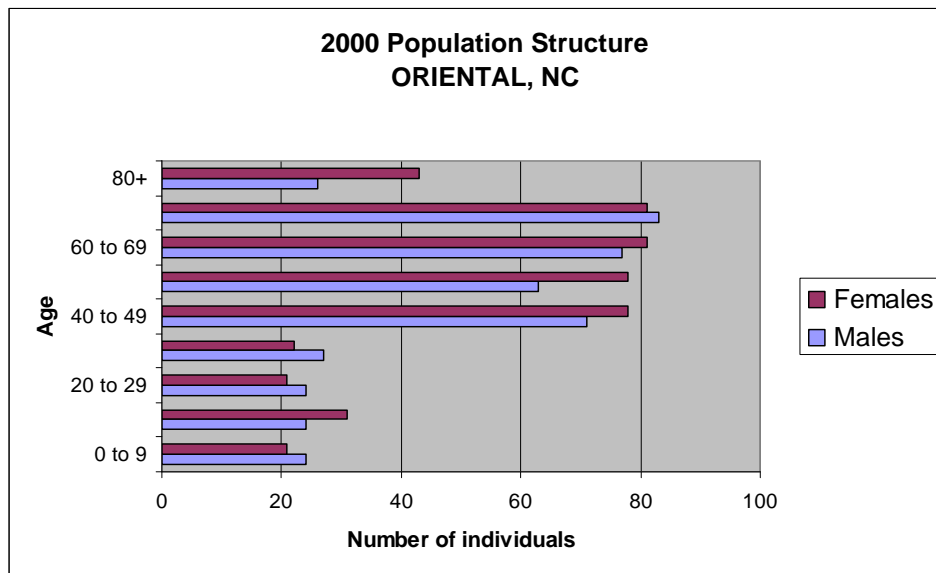


Figure 1. Oriental's population structure by sex in 2000 (US Census Bureau 2000)

The majority of the population was white (90.7%), with 7.4% of residents black or African American, 0.5% Asian, 0.3% Native American, and none Pacific Islander or Hawaiian (Figure 2). Only 1.4% of the population identified themselves as Hispanic/Latino (Figure 3). Residents linked their backgrounds to a number of different ancestries including: English (21.5%), German (19.4%), Irish (10.5%), and other ancestries (11.0%). With regard to region of birth, 43.5% were born in North Carolina, 51.9% were born in a different state and 4.6% were born outside of the U.S. (including 1.0% who were not United States citizens).

³ While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

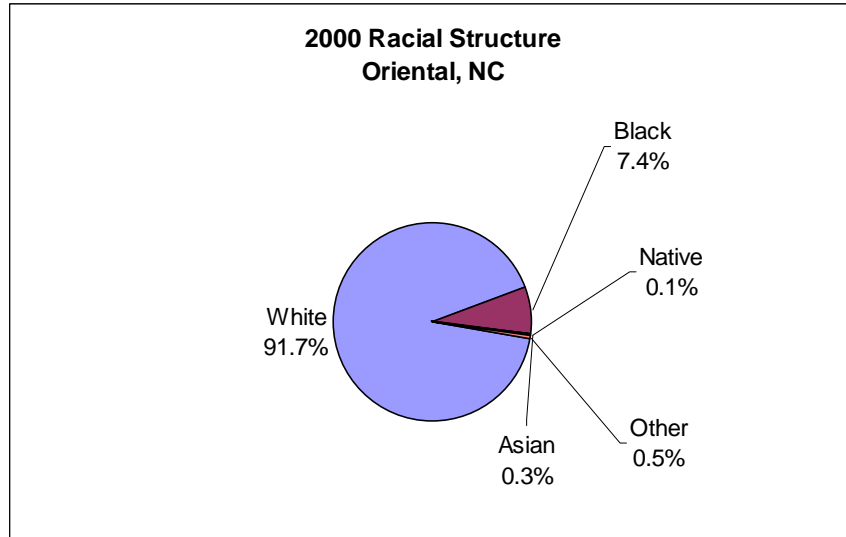


Figure 2. Racial Structure in 2000 (US Census Bureau 2000)

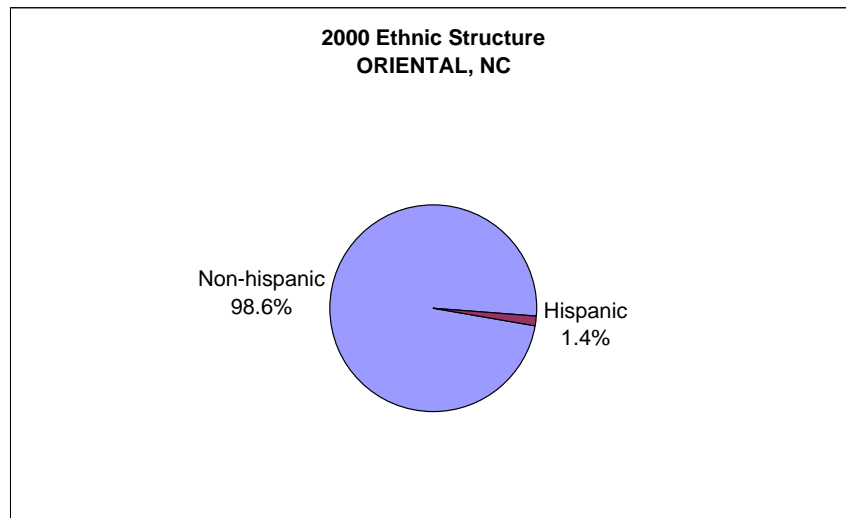


Figure 3. Ethnic Structure in 2000 (US Census Bureau 2000)

For 95.0% of the population, only English was spoken in the home, leaving 5.0% in homes where a language other than English was spoken, and including 1.3% of the population who spoke English less than “very well” according to the 2000 Census.

Of the population 25 years and over, 89.1% were high school graduates or higher and 35.2% had a bachelor’s degree or higher. Again of the population 25 years and over, 1.7% did not reach ninth grade, 9.2% attended some high school but did not graduate, 21.0% completed high school, 25.9% had some college with no degree, 6.9% received an associate’s degree, 22.1% earned a bachelor’s degree, and 13.2% received a graduate or professional degree.

Although religion percentages are not available through the U.S. Census, according to the Association of Religion Data Archives (ARDA) in 2000, the religion with the highest number of congregations and adherents in Pamlico County was United Methodist with 8 congregations and 1,410 adherents. Other prominent congregations in the county were Original Free Will Baptists (8 with 1,070 adherents), Christian Church (Disciples of Christ) (3 with 492 adherents), and

Southern Baptist Convention (3 with 492 adherents). The total number of adherents to any religion was down 17.0% from 1990 (ARDA 2000).

Issues/Processes

Shrimp fishermen along the North Carolina coast have suffered because of decreasing prices of shrimp, resulting from an increase of foreign farmed shrimp on the market. North Carolina shrimp fishermen are working to promote their wild-caught shrimp to create a niche market and higher prices for their product (NCSG 2005). The North Carolina Division of Marine Fisheries was discussing minimum size limits for the shrimp that could be taken by trawlers, noting that foreign imports have cornered the market on small shrimp (Smith 2005).

Crab fishermen along North Carolina's eastern coast have also seen an increase in competition from the global market, with an influx of imported crab meat from around the world. Many local Crab processors are unable to compete and are losing profit (NCSG 2002).

Cultural attributes

The annual [Pamlico County Blessing of the Fleet](#), which used to be held each June in Hobucken, no longer occurs. The event once featured a parade of the fleet's vessels, seafood dinners, educational displays, and commercial fishing boat tours, all sponsored by the North Carolina Fisheries Association Auxiliary, Pamlico Chapter.

The Oriental Rotary Club holds a Tarpon Tournament each July (Visitoriental.com 2005). The town's largest event is the yearly [Croaker Festival](#), an event honoring the croaker with a parade, boat races, the Croaker King and Queen Pageant, and fireworks. [Spirit of Christmas](#) takes place every year during the second week in December. Civic groups and churches open their doors with refreshments and entertainment as a way to thank the community. Oriental also has the Running of the Dragon on New Year's Eve. This is a popular event where the Town's dragon makes its way down the street along the Town Dock with people following clanging pots and pans and others making music to bring in the New Year.⁴

INFRASTRUCTURE

Current Economy

Within Pamlico County, seafood processing, boat building, and government manufacturing account for most manufacturing done here. As much as 10% of the population of Pamlico County may be involved in the commercial fishing industry, whether directly or indirectly (Pamlico County Chamber of Commerce 2005). The largest employers in Pamlico County are two camps, [Camp Seafarer and Camp Seagull](#), which each employ 350 people seasonally. Other significant [employers](#) in the county are the [Pamlico Corrections Institute](#), the Pamlico County government, and [Pamlico Community College](#).

[Garland Fulcher Seafood](#) in Oriental is a processing and canning facility, employing 40-50 people during their slow season, and as many as 125 during the summer season.⁵ This includes roughly 60 Mexican migrant workers hired each year to pick crabs during the summer months (Hedlund 2005). Oriental has a number of marinas and other businesses involved with the marine industry, including sales, repairs, and insurance, as well as a number of realtors (Oriental Tourism Board 2005).

⁴ Community Review Comments, Wyatt Cutler, Town Manager, 507 Church St., Oriental, NC 28571, October 30, 2007

⁵ Personal Communication, Michelle, Garland Fulcher Seafood, 301 Hodges St., Oriental, NC 28571, July 20, 2005

According to the U.S. Census 2000⁶, 37.0% (395 individuals) of the total population 16 years of age and over were in the labor force (Figure 4), of which 2.0% were unemployed, 0.3% were in the Armed Forces, and 34.3% were employed.

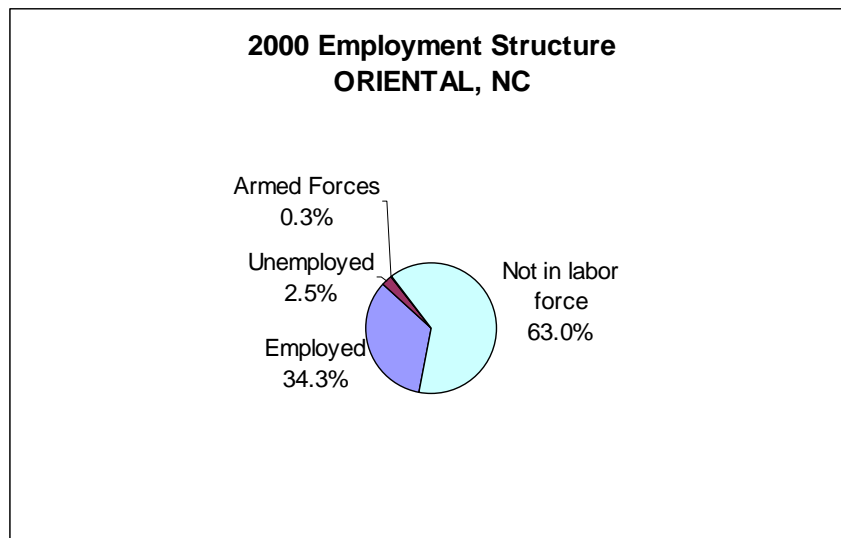


Figure 4. Employment Structure in 2000 (US Census Bureau 2000)

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 9 positions or 3.3% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 46 positions or 16.6% of jobs. Education, health, and social services (14.3%), retail trade (12.8%), arts, entertainment, recreation, accommodation, and food services (12.8%), and manufacturing (11.7%) were the primary industries.

Median household income in Oriental was \$37,794 (up 43.5% from \$26,339 in 1990 [US Census Bureau 1990]) and per capita income was \$25,949. For full-time year round workers, males made approximately 47.8% more per year than females.

The average family in Oriental consisted of 2.38 persons. With respect to poverty, 6.2% of families (down from 14.1% in 1990 [US Census Bureau 1990]) and 8.4% of individuals earned below the official U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 33.0% of all families (of any size) earned less than \$35,000 per year.

In 2000, Oriental had a total of 581 housing units, of which 76.4% were occupied and 79.0% were detached one unit homes. Twenty percent (20.0%) of these homes were built before 1940. Mobile homes accounted for 5.0% of the total housing units; 93.8% of detached units had between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$177,000. Of vacant housing units, 11.8% were used for seasonal, recreational, or occasional use. Of occupied units 19.8% were renter occupied.

⁶ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

Government

The Town of Oriental has a Board of Commissioners with five members, and a Town Mayor and Town Manager (Town of Oriental 2005).

Fishery involvement in the government

Information on fishery involvement in government in Oriental is unavailable through secondary data collection.

Institutional

Fishing associations

[The North Carolina Fisheries Association](#) has been supporting fishing families since 1952, with the goal “to celebrate and preserve commercial fishing families, heritage, and seafood” in North Carolina. This is achieved through lobbying federal, state, and local legislators and through public awareness projects. The North Carolina Fisheries Association Auxiliary has a [Pamlico Chapter](#).

Fishing assistance centers

[Pamlico Community College](#) offers a number of job retraining and placement programs both on location at its facility in Grantsboro and for long-distance learners. The Trade Adjustment Assistance for Farmers (TAA) program has provided business education to shrimp fishermen in the state to assist them in recent changes in the market of shrimp, and also provides some training to fishermen to exit the business if they chose.

Other fishing related organizations

Information on other fishing related organizations is unavailable through secondary data collection.

Physical

Oriental is located roughly 20-25 miles from Interstate 70, which travels to Raleigh, and Route 17, which travels to the Norfolk/Virginia Beach area of Virginia (MapQuest.com 2005). Morehead City is 40 miles away, Washington is 59 miles away, and Raleigh is 140 miles from Oriental. The closest airport, Craven County Regional Airport in New Bern, is 20 miles from Oriental.

The fishing fleet in Oriental generally accesses the ocean through Beaufort Inlet, and also sometimes through Oregon Inlet. Oriental has a number of marinas that mostly service sailboats and recreational power vessels, either permanently stationed here or just passing through as they travel the Intracoastal Waterway (Pamlico County Chamber of Commerce).

INVOLVEMENT IN NORTHEAST FISHERIES⁷

Commercial

Garland Fulcher Seafood, a processing and wholesale facility, owns 9 trawlers and has a dock attached to the facility where these trawlers tie up. In a good year, there will be 10-12 boats in addition to the 9 owned by the company that pack here; some of these vessels come from out of state.⁸ [Fulcher's Point Pride Seafood](#) is another processing and wholesale facility located in Oriental, which distributes mostly blue crab to such large companies as WalMart and the Winn-Dixie supermarket chain.

The top value species landed in Oriental is was *penaeid* shrimp (in the “other” species grouping). Landings in the “other” grouping were less in 2006 than the average landings value for 1997-2006 (Table 1). Landings in the summer flounder, scup, and black sea bass grouping were also significant. At least one of the sea scallop vessels fished off and landed in New Bedford some of the time (Kennedy 2005). The value of fishing by vessels with Oriental as their home port increased close to twenty-fold between 1997-2006, to over \$8 million in 2006, while the value of fish landed here reached its highest level in 2000. The number of vessels listing Oriental as their home port and the number of vessels owned by Oriental residents both increased from 1997–2006; home port vessels went from just 3 in 1997 to 26 in 2006 (Table 2).

Landings by Species

Table 1. Dollar value by Federally Managed Groups of landings in Oriental

	Average from 1997-2006	2006 only
Other⁹	1,702,113	1,350,410
Summer Flounder, Scup, Black Sea Bass	559,869	945,609
Scallop	103,306	225,637
Monkfish	5,237	7,502
Squid, Mackerel, Butterfish	2,419	2,490
Bluefish	1,392	1,294
Largemouth Groundfish¹⁰	57	0
Tilefish	4	0
Skate	2	0

⁷ In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

⁸ Personal Communication, Michelle, Garland Fulcher Seafood, 301 Hodges St., Oriental, NC 28571, July 20, 2005

⁹ “Other” species includes any species not accounted for in a federally managed group

¹⁰ Largemouth Groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

Vessels by Year¹¹

Table 2. All columns represent vessel permits or landings value combined between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port (\$)	Level of fishing landed port (\$)
1997	3	7	408,037	2,313,949
1998	7	7	1,227,342	1,902,226
1999	8	8	2,487,175	3,518,360
2000	7	7	2,884,677	4,781,313
2001	8	8	1,856,801	1,678,007
2002	10	12	3,277,209	1,964,613
2003	11	14	4,493,867	938,994
2004	18	18	5,537,892	2,288,317
2005	22	20	9,606,597	1,825,280
2006	26	25	8,007,900	2,532,942

(Note: # Vessels home ported = No. of permitted vessels with location as homeport

Vessels (owner's city) = No. of permitted vessels with location as owner residence¹²

Level of fishing home port (\$) = Landed value of fisheries associated with home ported vessels

Level of fishing landed port (\$) = Landed value of fisheries landed in location)

Recreational

Recreational fishing is a billion dollar industry in North Carolina. Oriental has one [sportfishing tournament](#) each year, as well as a few [fishing guide](#) services. Some of the marinas are home to [sport fishing charter vessels](#). One website noted that despite its location and the presence of a public boat ramp, the [sport fishing](#) industry in Oriental remains “in its infancy.”

Subsistence

Information on subsistence fishing in Oriental is either unavailable through secondary data collection or the practice does not exist.

FUTURE

Information on plans for the future in Oriental is unavailable through secondary data collection.

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¹¹ Numbers of vessels by owner's city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

¹² The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

[dec04.pdf](#)

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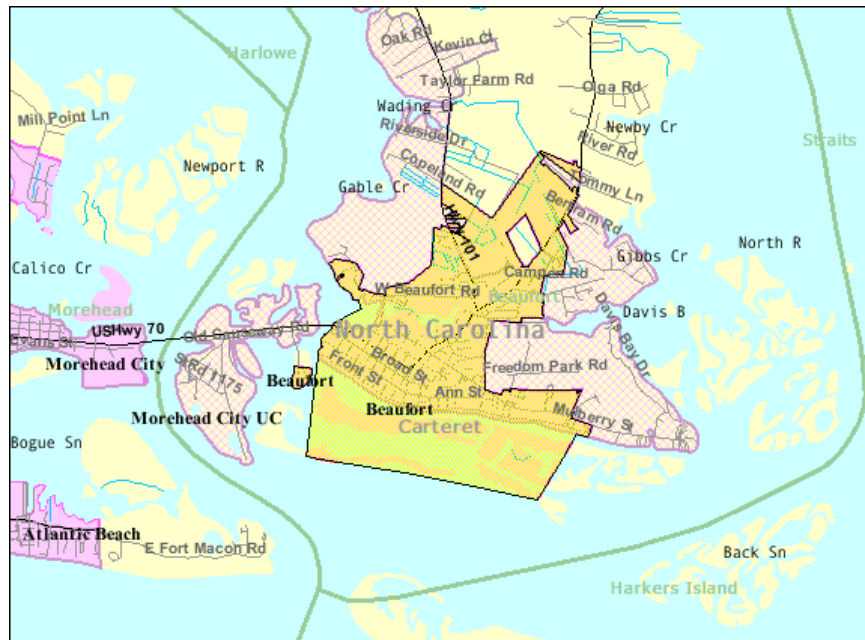
BEAUFORT, NC¹

Community Profile²

PEOPLE AND PLACES

Regional orientation

Beaufort (34.72 N, 76.66 W) is located across from the Beaufort Inlet in Carteret County, in the middle of the state of North Carolina's coastline. It is roughly 4 miles from Morehead City and 150 miles from Raleigh (MapQuest). Beaufort has 90.47 square miles of land and 1.71 square miles of water surface (USGS 2008).



Map 1. Location of Beaufort, NC (US Census Bureau 2000)

Historical/Background

Founded in 1709, the town of Beaufort is the third oldest town in North Carolina. By the Act of 1723, the North Carolina colonial legislature established a “Port of Beaufort” (Town of Beaufort 2006). During the American Revolution, Beaufort was the third largest port in the state. Around that time, trade was centered mainly on lumber products. These items were shipped to the West Indies in exchange for things such as rum, coffee, glassware, furniture, and cloth. Following the Civil War, trade was still strong for a time with chief exports being barrel staves, molasses, rum, and lumber. Over time, Beaufort declined as a trade center and commercial fishing became the primary business. In 1997, remains of what is presumed to be

¹ These community profiles have been created to serve as port descriptions in Environmental Impact Statements (EISs) for fisheries management actions. They also provide baseline information from which to begin research for Social Impact Assessments (SIAs). Further, they provide information relevant to general community impacts for National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and information on minorities and low income populations for Executive Order (E.O.) 12898 on Environmental Justice.

² For purposes of citation please use the following template: “Community Profile of *Town, ST*. Prepared under the auspices of the National Marine Fisheries Service, Northeast Fisheries Science Center. For further information contact Lisa.L.Colburn@noaa.gov.”

Blackbeard’s flagship, the *Queen Anne’s Revenge*, were found two miles from Beaufort Inlet (Town of Beaufort 2006a).

Demographics³

According to Census 2000 data, Beaufort had a total population of 3,771, down 1.0% from the reported population of 3,808 in 1990 (US Census Bureau 1990). Of this 2000 total, 46.5% were male and 53.5% were female. The median age was 42.7 years and 78.8% of the population was 21 years or older while 22.7% was 62 or older.

The age structure for Beaufort (Figure 1) is fairly average. The greatest numbers of both men and women were in the 40-49 age category, followed closely by the 30-39 and the 50-59 age groupings. From the 40-49 year old age range onward, females noticeably out-number the males.

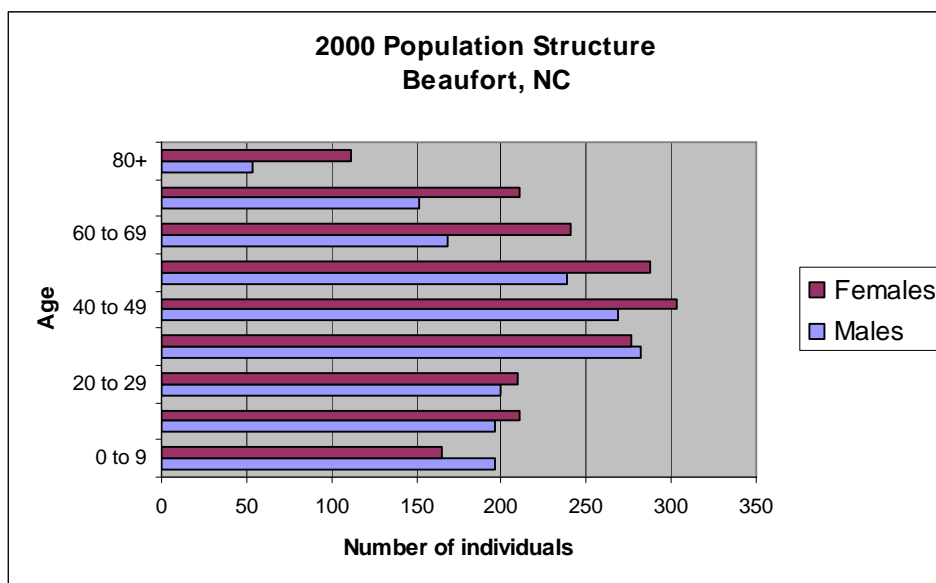


Figure 1. Beaufort’s population structure by sex in 2000 (US Census Bureau 2000)

The majority of the population was white (77.0%), with 19.2% of residents black or African American, 0.5% Asian, 0.6% Native American, and 0.1% Pacific Islander or Hawaiian (Figure 2). Only 3.8% of the population identified themselves as Hispanic/Latino (Figure 3). Residents linked their backgrounds to a number of different ancestries including: English (22.0%), United States or American (10.7%), German (6.8%), and Irish (6.7%). With regard to region of birth, 58.7% were born in North Carolina, 36.3% were born in a different state and 4.3% were born outside of the U.S. (including 3.3% who were not United States citizens).

³ While mid-term estimates are available for some larger communities, data from the 2000 Census are the only data universally available for the communities being profiled in the Northeast. Thus for cross-comparability we have used 2000 data even though these data may have changed significantly since 2000 for at least some communities.

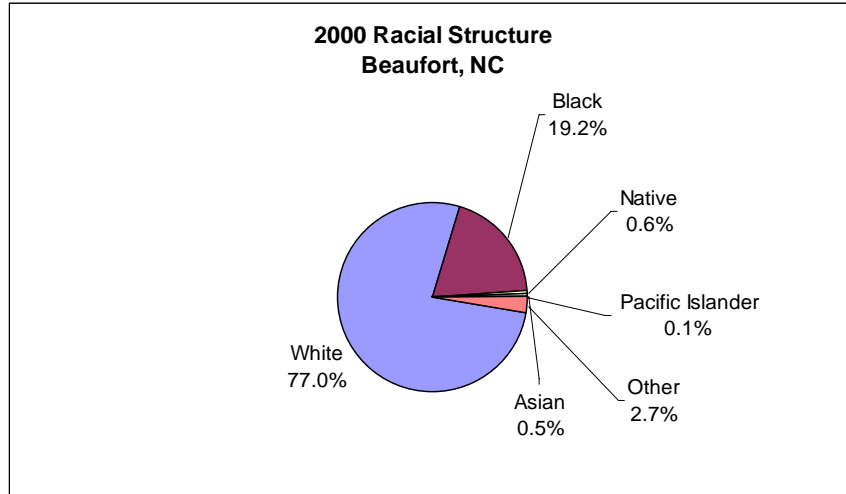


Figure 1. Racial Structure in 2000 (U.S. Census 2000)

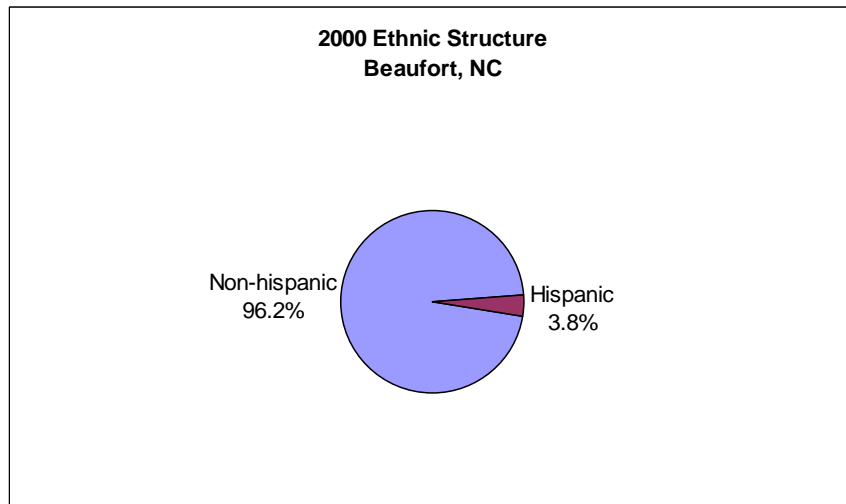


Figure 2. Ethnic Structure in 2000 (U.S. Census 2000)

For 93.0% of the population, only English is spoken in the home, leaving 7.0% in homes where a language other than English is spoken, and including 2.7% of the population who spoke English less than 'very well' according to the 2000 Census.

Of the population 25 years and over, 78.9% were high school graduates or higher and 21.7% had a bachelor's degree or higher. Again of the population 25 years and over, 6.2% did not reach ninth grade, 14.8% attended some high school but did not graduate, 26.7% completed high school, 24.7% had some college with no degree, 5.9% received an associate's degree, 14.2% earned a bachelor's degree, and 7.5% received a graduate or professional degree.

Although religion percentages are not available through the U.S. Census, according to the Association of Religion Data Archives (ARDA) in 2000, the religion with the highest number of congregations and adherents in Carteret County was Southern Baptist Convention with 20 congregations and 7,079 adherents. Other prominent congregations in the county were United Methodist (22 with 6,057 adherents), Catholic (1 with 1,798 adherents), and Original Free Will Baptists (13 with 1,662 adherents). The total number of adherents to any religion was up 1.0% from 1990 (ARDA 2000).

Issues/Processes

The North Carolina coast has experienced several natural disasters in the past years. In 2005, the [NC Department of Agriculture and Consumer Services](#) distributed more than \$645,000 to assist with commercial fishing losses associated with hurricane damage in 2004.

The subject of menhaden fishing has been a hot issue in the past couple years around Beaufort. In August 2005, a bill was presented to the North Carolina General Assembly to study the effects of commercial fishing to “consider whether it would be a good idea to ban commercial menhaden fishing off New Hanover and Brunswick counties.” This would have affected Beaufort, once the location of the last menhaden processing plant in North Carolina. The Beaufort Fish House (the Menhaden plant) has closed and the site is now a planned Real Estate development.⁴ About eighty people worked at the plant at the season’s height (Star News Staff 2005). However, some local fishing clubs are glad to see the plant close, as they believe recreational fishing brings in more revenue to the city. Also, with increasing stocks of menhaden, some comment that recreational activity will increase and infuse the area and the local economy with more income.⁵ As of October 2007, a ban on menhaden purse seining off Brunswick County won legislative approval, despite opposition from North Carolina fisheries managers (West 2007).

The big issues in Beaufort and Morehead City relates to the loss of working waterfront for commercial fishermen. Regulations on the fishing industry and the shuffling of the fleet to different docks have put the snapper-grouper fleet’s future in question. The two fish houses on Radio Island, (technically Beaufort but located on the causeway separating Beaufort/ Morehead City) are the last remaining companies. These companies are Luther Smith and Sons and Homer Smith. T.B. Smith, located next door to these fish houses, is the largest marine railways in the area for boat haul-outs. The two large trawl vessels owned by Luther Smith have been sold and that fish house many soon be gone.⁶

Shrimp fishermen along the North Carolina coast have suffered because of decreasing prices of shrimp, resulting from an increase of foreign farmed shrimp on the market. North Carolina shrimp fishermen are working to promote their wild-caught shrimp to create a niche market and higher prices for their product (NCSG 2005). The North Carolina Division of Marine Fisheries was discussing minimum size limits for the shrimp that could be taken by trawlers, noting that foreign imports have cornered the market on small shrimp (Smith 2005).

Some good news for the seafood industry is the “[Carteret Catch](#)”, a marketing program designed to promote local seafood. In addition, NC legislators passed legislation that enables fish house owners to apply for [Present Use Value taxation](#), like farmers, rather than taxes based on real estate values. The state also set aside \$20 million towards the enhancement of public access and working waterfront. Director Louis Daniel at the Division of Marine Fisheries is overseeing the program. In 1997, the state also passed the Fisheries Reform Act that mandated fisheries management plans for all important recreational and commercial species, establishing an extensive citizen advisory system. North Carolina is often referred to as having one of the best fisheries data collection programs along the east coast of the US.⁷

⁴ Community Review comments, Capt. Dale Britt, F/V Sensation, 2012 Shepard Street, Morehead City Waterfront, Morehead City, NC 28557, October 22, 2007

⁵ Community Review Comments, Lt Cmdr Bruce Gay, Jr., 206 Yaupon Drive, Cape Cartaret, NC 28584, Oct 30, 2007

⁶ Community Review Comments, Barbara Garett Blake, Marine Fisheries Commission, 3441 Arendell Street - Morehead City, NC 28557, September 28, 2007

⁷ Community Review Comments, Barbara Garett Blake, Marine Fisheries Commission, 3441 Arendell Street - Morehead City, NC 28557, September 28, 2007

Cultural attributes

[The North Carolina Maritime Museum](#) is located in Beaufort and states its mission is to “preserve and interpret all aspects of North Carolina’s rich maritime heritage through educational exhibits, programs and field trips.” It is home to hundreds of items “relating to the state’s strong link to the sea.”

INFRASTRUCTURE

Current Economy

Beaufort Fisheries is called the oldest existing industry in the area. It is now the only menhaden plant operating in the state, and is now one of only two operating along the Atlantic seaboard. The menhaden are processed into fish meal and oil. Fish meal can be used as a protein component in many animal feeds. Fish oil is used in such products as cosmetics, margarine, and paints. Beaufort Fisheries employs 55 people (Insiders.com 2006). There are other commercial fishing companies, such as [McIntosh Seafood](#) and [T. B. Smith Seafood](#).

[Atlantic Veneer Corporation](#) is the largest manufacturer of hardwood veneers in North America. It exports about half of its products. Atlantic Veneer also operates a local retail outlet, which is an important source of lumber and hardwoods for boat builders and cabinet makers. It is the county’s largest private employer, with about 327 employees. Other large employers in Carteret County are: the Carteret County Public School System, 1,100 employees; Carteret General Hospital, 830 employees; and Wal-Mart, 500 employees (Insiders.com 2006). [The Cherry Point Marine Corps Air Station](#) is about 20 miles north of Beaufort, and employs 1,770 Carteret County residents, or about 30% of the civilian population, in addition to the roughly [7,500 marines and sailors](#) stationed there.

According to the U.S. Census 2000⁸, 56.3% (1,737 individuals) of the total population 16 years of age and over were in the labor force (see Figure), of which 2.6% were unemployed, 0.6% were in the Armed Forces, and 53.0% were employed.

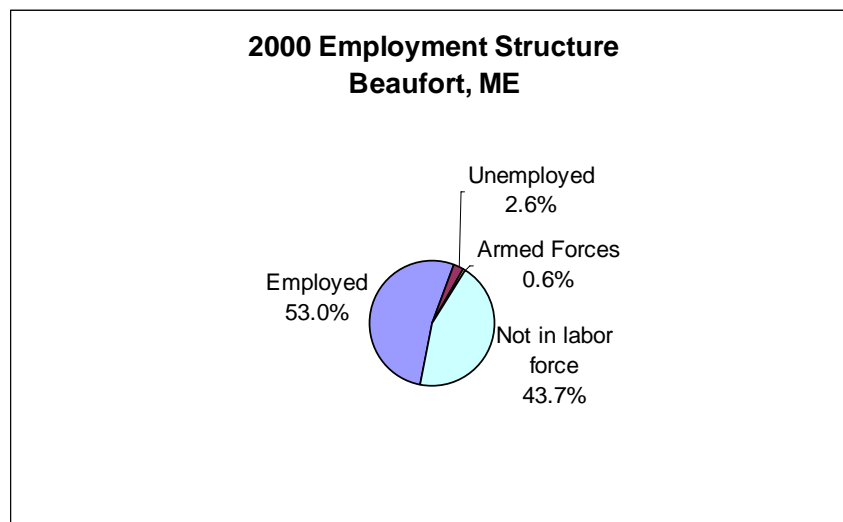


Figure 4. Employment Structure in 2000 (US Census Bureau 2000)

⁸ Again, Census data from 2000 are used because they are universally available and offer cross-comparability among communities. Some statistics, particularly median home price, are likely to have changed significantly since 2000.

According to Census 2000 data, jobs in the census grouping which includes agriculture, forestry, fishing and hunting, and mining accounted for 40 positions or 2.4% of all jobs. Self employed workers, a category where fishermen might be found, accounted for 281 positions or 17.2% of jobs. Arts, entertainment, recreation, accommodation and food services (18.0%), retail trade (15.0%), and educational, health and social services (13.2%) were the primary industries.

Median household income in Beaufort was \$28,763 (up 33.6% from \$21,532 in 1990 [US Census Bureau 1990]) and per capita income was \$19,356. For full-time year round workers, males made approximately 34.4% more per year than females.

The average family in Beaufort consists of 2.65 persons. With respect to poverty, 13.3% of families (down from 14.2% in 1990 [US Census Bureau 1990]) and 16.6% of individuals earn below the official U.S. Census poverty threshold. This threshold is \$8,794 for individuals and ranges from \$11,239 through \$35,060 for families, depending on number of persons (2-9) (US Census Bureau 2000b). In 2000, 44.3% of all families (of any size) earned less than \$35,000 per year.

In 2000, Beaufort had a total of 2,187 housing units, of which 81.4% were occupied and 64.7% were detached one unit homes. Nearly twenty percent (18.8%) of these homes were built before 1940. Mobile homes accounted for 6.2% of the total housing units; 96.1% of detached units have between 2 and 9 rooms. In 2000, the median cost for a home in this area was \$119,200. Of vacant housing units, 11.0% were used for seasonal, recreational, or occasional use. Of occupied units 43.9% were renter occupied.

Government

Beaufort functions under a Council/Manager form of government. It consists of five commissioners and the mayor. The commissioners are elected to alternating four year terms, while the mayor is elected for a two year term (Town of Beaufort 2000b). Major issues currently (October 2007) being addresses by the local government include: planning for future housing developments, pollution effects on shellfish areas, increased traffic, high property values, and water access.⁹

Fishery involvement in the government

Carteret County has a [Division of Marine Fisheries Advisory Board](#). Carteret Country also has a full time civilian working for the Coast Guard to provide safety exams for commercial fishermen to make sure fishing vessels meet all Federal requirements for safety at sea. Beaufort has a harbor master.

Institutional

Fishing associations

[The North Carolina Fisheries Association](#) has been supporting fishing families since 1952, with the goal “to celebrate and preserve commercial fishing families, heritage, and seafood” in North Carolina. This is achieved through lobbying federal, state, and local legislators and through public awareness projects. The [Carteret County Fisherman's Association](#), located in Davis, NC, is a member organization of the [North Carolina Fisheries Association](#), and is more geared towards supporting fishermen.

⁹ Community Review Comments, Lt Cmdr Bruce Gay, Jr., 206 Yaupon Drive, Cape Cartaret, NC 28584, Oct 30, 2007

Fishing assistance centers

The Trade Adjustment Assistance for Farmers (TAA) program has provided business education to shrimpers in the state to assist them in recent changes in the market of shrimp, and also provided some training to shrimpers to exit the business if they chose (Smith 2005).

Other fishing related organizations

The Carteret County Sportfishing Association is dedicated to protecting the interests of sportfishermen in Carteret County and educating the public about the wildlife of Carteret County. The association gives two scholarships annually to Carteret County residents enrolled in a marine studies program at Carteret County Community College (State of North Carolina 2006).

Physical

Beaufort is located on the southern tip of the Outer Banks, near the end of Interstate 70. From Interstate 70, it is about 150 miles west to Raleigh (MapQuest). The [Michael J. Smith](#) field airport, located in town, mainly caters to private and charter planes. The closest airport with commercial flights, Craven Regional Airport, is located 40 miles north in New Bern.

There are about [10 marinas in Beaufort](#); the largest being Beaufort Docks which has 100 slips and can accommodate boats up to 250 feet in length. Also, some fishing companies, such as Beaufort Fisheries, have private docks.

INVOLVEMENT IN NORTHEAST FISHERIES¹⁰

Commercial

Carteret County consistently leads the rest of North Carolina in seafood landings, (Carteret County Economic Development Council 2005) with 46.3% of landed weight on average between the years 1994-2001. Of this total weight, 75% on average was Atlantic menhaden (Bianchi 2003). Beaufort Fisheries is the only Menhaden processing plant in North Carolina and one of only two along the Atlantic seaboard. The fish is caught by the company vessels and then brought to the docks along side Taylors Creek. The menhaden are then processed into fish meal and oil. Beaufort Fisheries' annual production is estimated at 10,000 tons of meal and 300,000 to 450,000 gallons of oil. The company employs 55 people and operates two menhaden boats (Insiders.com 2006).

Many of the fishermen who work out of Beaufort are from Down East communities such as Cedar Island, Atlantic, and Davis, all traditional fishing villages. One of the two larger fish houses in Atlantic, Clayton Fulcher and Son, closed in 2007 which will likely impact Beaufort

¹⁰ In reviewing the commercial landings data several factors need to be kept in mind. 1) While both federal and state landings are included, some states provide more detailed data to NMFS than others. For example, shellfish may not be included or data may be reported only by county and not by port. 2) Some communities did not have individual port codes until more recently. Before individual port codes were assigned, landings from those ports were coded at the county level or as an aggregate of two geographically close small ports. Where landings were coded at the county level they cannot be sorted to individual ports for those earlier years, e.g., prior to 2000. 3) Where aggregated codes were used, those aggregate codes may still exist and be in use alongside the new individual codes. Here the landings which are still assigned to the aggregate port code cannot be sorted into the individual ports, so port level data are only those which used the individual port code. 4) Even when individual port codes exist, especially for small ports, landings may be coded at the county level. Here again it is impossible to disaggregate these to a port level, making the port level landings incomplete. 5) In all these cases, the per port data in this profile may under report the total level of landings to the port, though all landings are accounted for in the overall NMFS database.

fishermen. Nearby Harkers Island, long a fishing and boat building center, has no more fish houses.¹¹

In 2006, the most valuable landings in Beaufort were in the “Other” category, but this value was very similar to that for summer flounder, scup, and black sea bass (Table 1). Both the level of home port fishing and the level of landings in Beaufort was variable, between the 1997-2006 time period. The number of vessels both home ported and whose owner’s city was Beaufort generally increased, with the exception of a slight dip in 2006 (Table 2).

Landings by Species

Table 1. Dollar value by Federally Managed Groups of landings in Beaufort

	Average from 1997-2006	2006 only
Other¹²	2,097,663	1,556,593
Summer Flounder, Scup, Black Sea Bass	987,903	1,522,597
Scallop	148,042	168,236
Monkfish	9,664	6,623
Squid, Mackerel, Butterfish	7,224	3,541
Bluefish	6,347	1,965
Dogfish	3,660	0
Tilefish	266	0
Largemesh Groundfish¹³	155	517
Smallmesh Groundfish¹⁴	22	0

Vessels by Year¹⁵

Table 2. All columns represent vessel permits or landings value combined between 1997-2006

Year	# Vessels (home ported)	# Vessels (owner's city)	Level of fishing home port (\$)	Level of fishing landed port (\$)
1997	12	12	906,322	2,957,119
1998	9	10	618,295	4,054,822
1999	8	17	1,284,287	3,653,821
2000	17	18	3,088,077	3,569,251
2001	18	17	2,047,592	2,398,485
2002	18	17	2,618,162	3,551,520
2003	16	17	2,085,527	2,688,498
2004	17	17	2,645,490	3,893,049
2005	19	19	3,332,070	2,582,822
2006	16	17	2,750,147	3,260,072

Vessels home ported = No. of permitted vessels with location as homeport

Vessels (owner's city) = No. of permitted vessels with location as owner residence¹⁶

Level of fishing home port (\$) = Landed value of fisheries associated with home ported vessels

Level of fishing landed port (\$) = Landed value of fisheries landed in location

¹¹ Community Review Comments, Barbara Garety Blake, Marine Fisheries Commission, 3441 Arendell Street - Morehead City, NC 28557, September 28, 2007

¹² “Other” species includes any species not accounted for in a federally managed group

¹³ Largemesh groundfish: cod, winter flounder, yellowtail flounder, American plaice, sand-dab flounder, haddock, white hake, redfish, and pollock

¹⁴ Smallmesh multi-species: red hake, ocean pout, mixed hake, black whiting, silver hake (whiting)

¹⁵ Numbers of vessels by owner’s city and homeport are as reported by the permit holder on permit application forms. These may not correspond to the port where a vessel lands or even spends the majority of its time when docked.

¹⁶ The Owner-City from the permit files is technically the address at which the owner receives mail concerning their permitted vessels, which could reflect the actual location of residence, the mailing address as distinct from residence, owner business location, or the address at which a subsidiary receives mail about the permits.

Recreational

Recreational fishing is a billion dollar industry in North Carolina (Stoffle nd) . Beaufort has [several charter and party boat companies](#), such as [Mystery Tours Inc.](#) which has a 65 foot boat which can accommodate 40-50 people comfortably. They advertise fishing for “flounder, trout, croakers, spots, black sea bass, sharks, blues, and many other fish abundant in the area.” There are also several fishing tournaments that go on throughout the year.

Subsistence

Information on subsistence fishing in Beaufort is either unavailable through secondary data collection or the practice does not exist.

FUTURE

One of the major issues facing the future of commercial fishing in Beaufort is pressure from the recreational fishing companies. The recreational fishing companies are concerned with the harvesting of menhaden, which is a major source of food for larger fish (Cheuvront 2004). In August 2005, Atlantic States Marine Fisheries Commission, the agency that manages fisheries from Maine to Florida, placed the first ever cap on menhaden fishing in the Chesapeake Bay. It capped the annual catch at 105,800 metric tons a year (Boorstein 2005). This cap could force more boats further south to the Beaufort area, making the menhaden situation worse.

In a study done by Dr. Brain Cheuvront, of the Department of Environment & Natural Resources Division of Marine Fisheries, several local fishermen were interviewed to find out their thoughts about the future. “Most of the respondents were too worried about the future of the commercial fishery to recommend it [as an occupation for future generations]” (Cheuvront 2004). One general manager was quoted saying “I’ve got two boys and I told both of them I’m not going to allow them to come down here. I want something better for them than this” (Cheuvront 2004).

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