



Bluefish Fishery Information Document

June 2023

This Fishery Information Document provides a brief overview of the biology, stock condition, management system, and fishery performance for bluefish with an emphasis on 2022. Data sources for Fishery Information Documents are generally from unpublished National Marine Fisheries Service (NMFS) survey, dealer, vessel trip report (VTR), permit, and Marine Recreational Information Program (MRIP) databases and should be considered preliminary. For more resources, including previous Fishery Information Documents, please visit <http://www.mafmc.org/bluefish/>.

Key Facts

- The bluefish stock entered a rebuilding plan in 2022 to rebuild the stock. The 2023 Management Track Assessment will use data through 2022 and provide updated stock status and biological reference points to be used for management in 2024-2025.
- Recreational landings were 11.35 million pounds in 2022, a 1.11 million pound decrease compared with 2021.
- In 2022, 80% of recreational bluefish catch was released while 20% was harvested, with the majority of harvest occurring from the shore mode and in state waters.
- Commercial landings were 2.14 million pounds in 2022, a 0.07 million pound increase compared with 2021.

Basic Biology

Bluefish are found worldwide in tropical and subtropical waters, but in the western North Atlantic range from Nova Scotia and Bermuda to Argentina. Bluefish travel in schools of like-sized individuals and undertake seasonal migrations, moving into the Middle Atlantic Bight (MAB) during spring and then south or farther offshore during fall. Within the MAB they occur in large bays and estuaries as well as across the entire continental shelf. Juvenile stages have been recorded in all estuaries within the MAB, but eggs and larvae occur in oceanic waters (Able and Fahay 1998). Bluefish have fast growth rates and reach lengths of 3.5 ft and can weigh up to 27 pounds (Bigelow and Schroeder 1953). Bluefish live to age 12 and greater (Salerno et al. 2001).

Bluefish eat a wide variety of prey items. The species has been described by Bigelow and Schroeder (1953) as “perhaps the most ferocious and bloodthirsty fish in the sea, leaving in its

wake a trail of dead and mangled mackerel, menhaden, herring, alewives, and other species on which it preys."

Bluefish born in a given year (young of the year) typically fall into two distinct size classes suggesting that there are two spawning events along the east coast. Studies suggest, however, that spawning is a single, continuous event, but that young are lost from the middle portion resulting in the appearance of a split season (Smith et al. 1994). As a result of the bimodal size distribution, young are referred to as spring-spawned or summer-spawned. In the MAB, spring-spawned bluefish appear to be the dominant component of the stock.

Status of the Stock

2021 Management Track Assessment

In June 2021, a bluefish management track assessment, which included revised bluefish MRIP estimates and commercial landings through 2019 indicated the bluefish stock is still overfished and overfishing is not occurring. This update builds upon the 2019 operational assessment with data through 2018 that first indicated the stock was overfished and overfishing was not occurring. This assessment has been used for management for 2022-2023.

2022 Research Track Assessment and 2023 Management Track Assessment

A bluefish research track stock assessment underwent peer review in December 2022. This research track assessment evaluated new datasets and model changes to develop an improved stock assessment for bluefish. This assessment will serve as the basis for a 2023 management track assessment. The 2023 management track assessment (MTA) will use data through 2022 and provide updated stock status and biological reference points to be used for management in 2024-2025. This management track assessment will undergo peer review June 26-28 and more information will be posted to [this NOAA Fisheries Assessment Site](#) as it becomes available.

Management System and Fishery Performance

Management

The Mid-Atlantic Fishery Management Council (Council or MAFMC) and the Atlantic States Marine Fisheries Commission (ASMFC) work cooperatively to develop fishery regulations for bluefish off the east coast of the United States. The Council and Commission 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 waters (0-3 miles offshore) and federal waters (3-200 miles offshore, also known as the Exclusive Economic Zone or EEZ). The management unit for bluefish is the U.S. waters in the western Atlantic Ocean.

The Bluefish Fishery Management Plan (FMP) was implemented in 1990 and established the Mid-Atlantic Fishery Management Council's management authority over the fishery in federal waters. Amendment 1, implemented in 2000, addressed stock rebuilding and created the Bluefish

Monitoring Committee which meets annually to make management measure recommendations to the Council. Amendment 3 incorporated the development of annual catch limits (ACLs) and accountability measures (AMs) into the specification process and Amendment 4 modified recreational accountability measures to accommodate uncertainty in recreational management and catch estimation. The original FMP and subsequent amendments and frameworks are available at: <http://www.mafmc.org/fisheries/fmp/bluefish>.

Until 2022, the annual catch limit was split 83 percent and 17 percent into recreational and commercial limits, respectively, and the discarded component of that catch was deducted to arrive at recreational and commercial total allowable landings (TAL). Additionally, landings above the expected recreational harvest could be “transferred” from the recreational to the commercial fishery as long as the final commercial quota did not exceed 10.5 million pounds. In June 2021, the Council and ASMFC’s Bluefish Board took final action on the Bluefish Allocation and Rebuilding Amendment. This action allocates 14 percent of the fishery annual catch limit to the commercial fishery and 86 percent to the recreational fishery, which is a 3-percentage point shift to the recreational sector from the prior allocations. This amendment also adjusted the commercial state quota allocations and allows bi-directional quota transfers. Amendment documentation is available at: <https://www.mafmc.org/actions/bluefish-allocation-amendment>.

The Council's SSC reviews stock assessment results and the Advisory Panel’s fishery performance report and sets the ABCs on a two year cycle with a review occurring between those two years. The Council's Bluefish Monitoring Committee develops and recommends specific coastwide management measures (commercial quota, recreational harvest limit) that will achieve the catch target and makes further adjustments to total catch as needed based on management uncertainty. Finally, the Council and Board meet jointly to develop recommendations to be submitted to the NMFS.

Table 1. Summary of bluefish catch, harvest, and management measures, 2014 – 2023 (Values are in millions of pounds). In 2019, recreational landings were provided using new MRIP estimates while the RHL was developed using old MRIP estimates so cannot be directly compared.

Management Measures	2014	2015	2016	2017	2018	2019	2020	2021	2022²	2023
ABC	24.43	21.54	19.45	20.64	21.81	21.81	16.28	16.28	25.26	30.62
TAL	21.08	18.19	16.46	18.19	18.82	19.33	12.25	12.25	17.43	18.40
Comm. Quota	7.46	5.24	4.88	8.54	7.24	7.71	2.77	2.77	3.54	4.29
Comm. Landings	4.77	4.02	4.1	3.64	2.20	2.78	2.16	2.07	2.14	--
Rec. Harvest Limit	13.62	12.95	11.58	9.65	11.58	11.62	9.48	8.34	13.89	14.11
Rec. Harvest, Old MRIP	10.46	11.67	9.54	9.52	3.64	--	--	--	--	--
Rec. Harvest, New MRIP	27.04	30.10	24.16	32.07	13.27	15.56	13.58	12.46	11.35	--
Rec. Possession Limit (# fish)	15	15	15	15	15	15	3: Private 5: For-Hire	3: Private 5: For-Hire	3: Private 5: For-Hire	3: Private 5: For-Hire
Total Landings	15.23	15.69	13.64	13.16	5.84	18.34	15.74	14.53	13.49	--
Overage/Underage	-5.85	-2.5	-2.82	-5.03	-12.98	N/A	+3.49	+2.28	-3.94	--
Total Catch ¹	17.96	18.65	16.09	15.65	6.96	23.50	19.93	21.25	17.85	--
Overage/Underage	-6.47	-2.89	-3.36	-4.99	-14.85	N/A	+3.65	+4.97	-7.41	--

¹ Recreational discards were calculated assuming MRIP mean weight of fish harvested in a given year multiplied by the MRIP B2s and the assumed discard mortality rate from the stock assessment (15% through 2021, 9.4% starting in 2022). ²Catch and landings values are preliminary and are not the final values to be used for catch accounting. Estimates from the 2023 Management Track Assessment will be used once available.

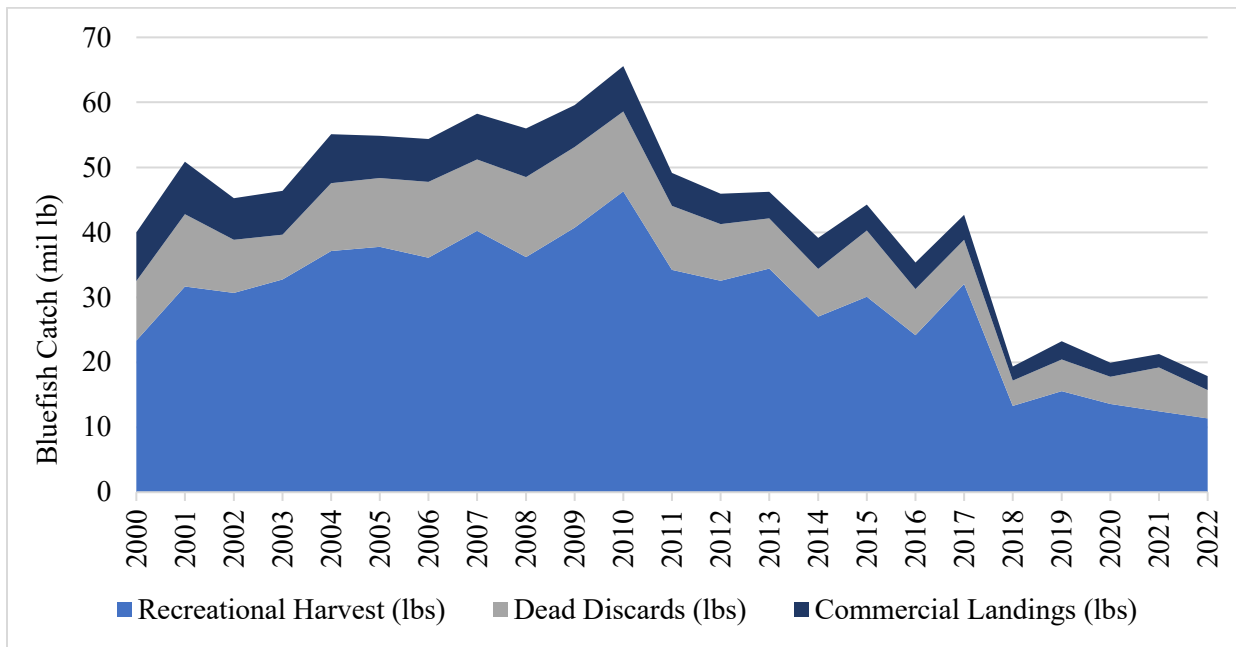


Figure 2. Bluefish catch (landings and dead discards), 2000-2022. Recreational dead discards are calculated as the average weight of a harvested fish by year and state multiplied by the B2s and 15% (2000-2021) or 9.4% (2022) discard mortality rate (Source: MRIP and Dealer data – cfders). Commercial discards are thought to be negligible. The full time series will be updated to account for commercial discards and updated discard mortality rates after the 2023 MTA.

Fishery Performance Relative to Management Measures

The recreational and commercial landings relative to specified management measures through 2023 are provided in Table 1. In 2022, the recreational fishery landed 11.35 million pounds compared to the 13.89 million pounds RHL and the commercial fishery landed 2.14 million pounds compared to the 3.54-million-pound quota.

Recreational Fishery

In July 2018, MRIP released revisions to their time series of recreational catch and landings estimates based on adjustments for a revised angler intercept methodology and a new effort estimation methodology (i.e., a transition from a telephone-based effort survey to a mail-based effort survey). The revised estimates of catch and landings are several times higher than the previous estimates for shore and private boat modes. All recreational estimates in this document reflect revised MRIP estimates except where otherwise noted. Recreational harvest estimates for 2020 were impacted by temporary suspension of shoreside intercept surveys due to the COVID-19 pandemic. NMFS used imputation methods to fill gaps in 2020 catch data with data collected in 2018 and 2019.

Trends in recreational trips associated with targeting or harvesting bluefish from 2013 to 2022 are provided in Table 2. During the past ten years, the lowest annual estimate of bluefish trips was 6.32 million (2022) and the highest annual estimate of bluefish trips was 12.82 million in

2012. Over the last 5 years (2017-2021), the number of bluefish trips averaged 7.57 million trips and the number of trips has been decreasing in recent years.

Table 2. Number of bluefish recreational fishing trips, landings per trip, harvest, catch and releases for the past 10 years, ME-FL.

Year	bluefish trips ¹ (N)	Landings per trip	Rec. Harvest (N)	Rec. Harvest (lbs)	Released (N)	Catch (N)
2013	9,353,805	2.14	19,975,051	34,398,327	33,519,613	53,494,664
2014	12,441,771	1.73	21,510,651	27,044,276	33,583,115	55,093,766
2015	9,406,704	1.46	13,725,106	30,098,649	28,423,854	42,148,960
2016	10,626,957	1.4	14,899,723	24,155,304	27,629,023	42,528,746
2017	9,952,090	1.39	13,845,806	32,071,432	28,317,327	42,163,133
2018	7,169,536	1.43	10,245,710	13,270,862	20,682,992	30,928,703
2019	8,250,853	1.47	12,137,290	15,555,889	26,494,646	38,631,936
2020	8,745,993	1.07	9,336,222	13,581,218	21,345,604	30,681,826
2021	7,409,375	0.83	6,183,783	12,462,781	23,566,217	29,750,000
2022	6,324,069	1.00	6,353,081	11,354,535	25,930,541	32,283,622

¹ Estimated number of recreational fishing trips where the primary target was bluefish or bluefish were harvested regardless of target

From the early 1980s to the early 1990s, recreational harvest declined about 70% (avg. 1981-1983 = 156.34 million pounds; avg. 1991-1993 = 46.14 million pounds). Recreational harvest continued to decline at a slower rate until reaching a low level in 1999-2000 but then grew to a peak of over 46 million pounds in 2010. Since 2018, recreational harvest dropped to the lowest values of the time series with a 2018-2022 average harvest of 13.25 million pounds. In 2022, landings were 11.35 million pounds. From 2000 to 2010 landings were relatively stable, however, recreational landings have been trending downward since 2010 (Figure 2).

Recreational catch and harvest estimates by state for 2022 are provided in Table 3. The greatest catches (harvest plus discards) occurred in North Carolina with 9.73 million fish, followed by New York with 7.14 million fish, and Florida and South Carolina with over 3 million fish.

The greatest harvest of bluefish by weight in 2022 occurred in New York with 3.45 million pounds, followed by Florida with 1.96 million pounds, and North Carolina, Massachusetts, and New Jersey with a little over 1 million pounds harvested. Average weights landed, based on dividing MRIP landings in weight by landings in number for each state, suggest that bluefish size tends to increase along the north Atlantic coast. In 2022, 80% of recreational bluefish catch was released while 20% was harvested, however this varied by state (Figure 3).

Table 3. MRIP estimates of 2022 bluefish recreational harvest, total catch, and average weight.

State	Harvest			Catch	Total Released	Dead Discards
	Pounds	Number	Average Weight ¹ (pounds)	Number	Number	Number
ME	73,697	8,326	8.9	31,061	22,735	2,137
NH	1,598	181	8.8	1,397	1,216	114
MA	1,277,203	183,470	7.0	1,533,782	1,350,312	126,929
RI	593,444	92,704	6.4	341,709	249,005	23,406
CT	541,930	105,910	5.1	715,327	609,417	57,285
NY	3,446,600	1,710,502	2.0	7,144,950	5,434,448	510,838
NJ	1,077,834	510,820	2.1	1,728,918	1,218,098	114,501
DE	51,550	38,676	1.3	548,873	510,197	47,959
MD	213,345	249,382	0.9	484,947	235,565	22,143
VA	215,999	262,360	0.8	1,534,477	1,272,117	119,579
NC	1,336,592	1,533,911	0.9	9,731,098	8,197,187	770,536
SC	259,372	487,654	0.5	3,194,059	2,706,405	254,402
GA	35,911	43,335	0.8	317,567	274,232	25,778
FL	1,957,211	1,125,847	1.7	3,768,905	2,643,058	248,447
Total	11,354,535	6,353,078	1.8	31,077,070	24,723,992	2,324,055

¹ Average weight is the pounds harvested divided by the number of fish harvested. Recreational dead discards in numbers of fish were calculated as 9.4% of total recreational discards.

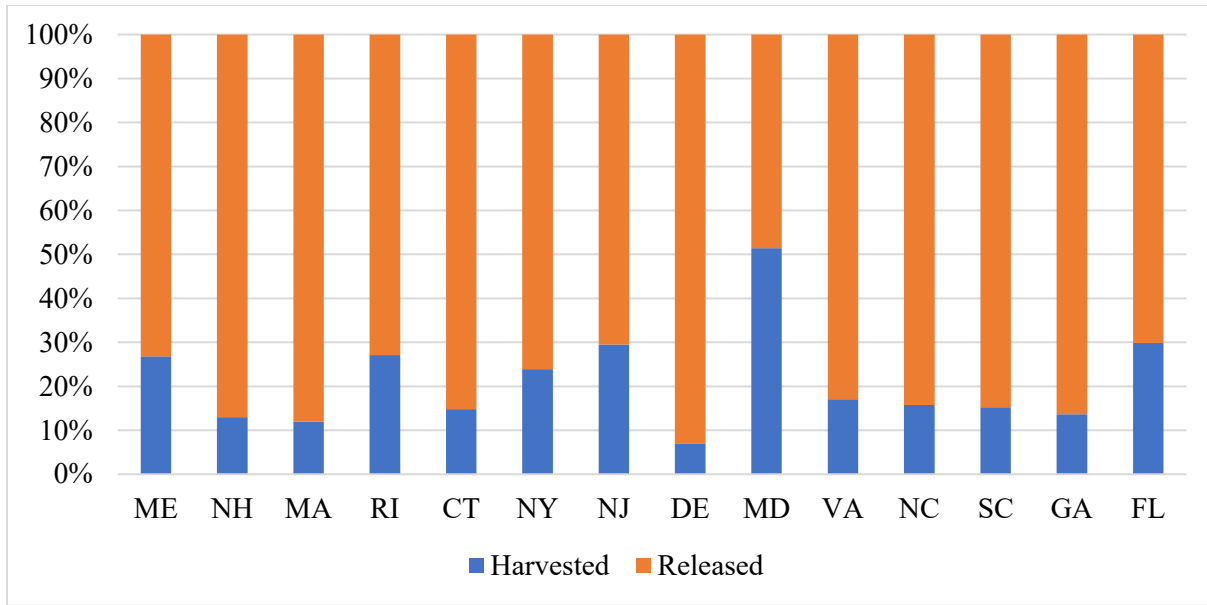


Figure 3. Proportion of bluefish recreational catch that was harvested and released by state in 2022 (in numbers of fish). Source: MRIP.

Figure 4 presents new MRIP estimates of landings by mode since 2002 and indicates that the recent primary modes landing bluefish are shore mode and private boats. Based on recreational harvest in 2022, landings from shore represented 55% of overall landings, followed by private rental mode at 41% and the for-hire sector at 5%. Over the last five years (2018-2022), ~65% of the total bluefish landings came from shore, ~31% from private/rental boats, and ~4% from for-hire boats. In 2022, 988 federal for-hire permits were issued for bluefish.

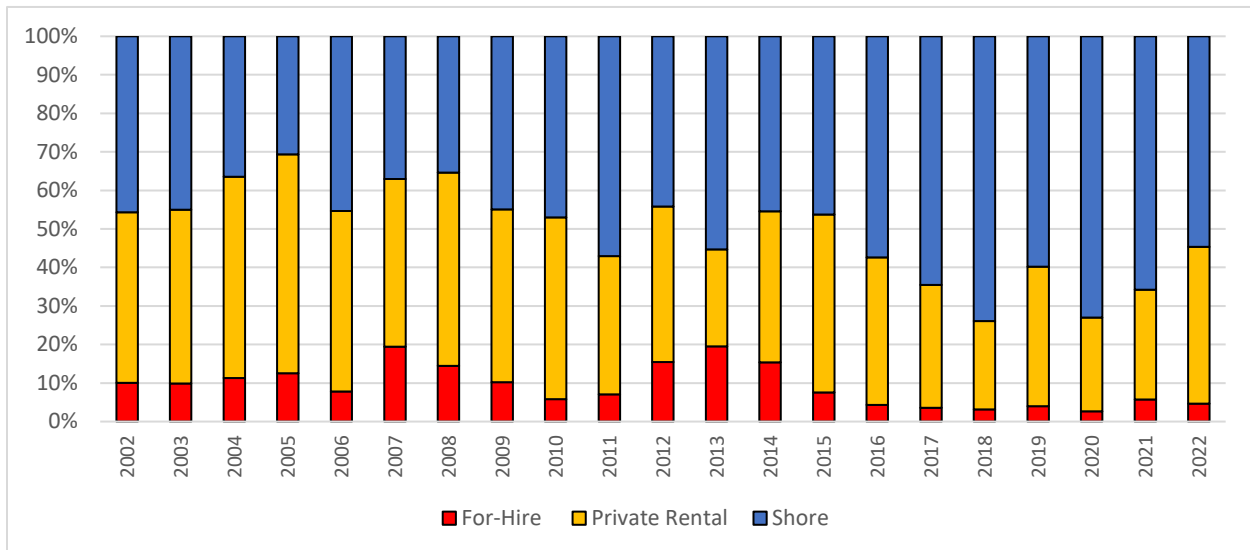


Figure 4. Bluefish recreational harvest (pounds) by mode on the Atlantic Coast, 2002-2022. Source: MRIP.

MRIP classifies catch into three fishing areas: inland, nearshore ocean (< 3 mi), and offshore ocean (> 3 mi). In 2022, the majority of coastwide bluefish harvest occurred in inland waters at 55%, followed by 40% from nearshore ocean, and 4% from offshore waters. Inland and nearshore ocean are considered state waters while offshore ocean (>3 miles) is federal waters, therefore 96% of bluefish harvest by weight occurred in state waters in 2022.

Commercial Fishery

Federal permit data indicate that 2,324 commercial bluefish permits were issued in 2022. A subset of federally permitted vessels was active in 2022 with dealer reports identifying 380 vessels with commercial bluefish permits that landed bluefish. Of the 165 federally permitted bluefish dealers in 2022, there were 137 dealers who bought bluefish.

In 2022, the commercial fishery landed 2.14 million pounds. Dealer data for 2022 indicate that most of the bluefish commercial landings were taken by gillnet (47%), trawl/dredge (44%), handline (6%), and other (3%).

Across states, 2022 commercial landings were the highest in North Carolina with 0.74 million pounds of bluefish landed, followed by New York at 0.37 million pounds and Massachusetts at 0.25 million pounds (Table 4). VTR catch data was used to identify all NMFS statistical areas that accounted for at least 5 percent of the total bluefish catch (Table 5). Seven statistical areas accounted for approximately 81% of the VTR-reported catch in 2022. The highest percentage of catch was from statistical area 612 with the most trips targeting bluefish conducted in statistical area 539. A map of the proportion of bluefish catch by statistical area based on federal VTR data is shown in Figure 5.

Table 4. Commercial landings by state for 2022 based on dealer data (cfders). Note that state only commercial landings from North Carolina and Florida are not always present in the cfders database. Final commercial catch accounting will be made available by GARFO prior to setting specifications.

State	2022 Landings (Pounds)
ME	C
NH	0
MA	254,138
RI	240,460
CT	41,597
NY	368,473
NJ	203,595
DE	6,716
MD	10,059
VA	187,526
NC	736,595
SC	0
GA	0
FL	93,018
Total	2,142,304

Table 5. Statistical areas that accounted for at least 5 percent of the total bluefish catch. Source: VTR database.

Statistical Area	Catch (lbs)	Percent of total catch	Number of trips
612	104,767	18%	218
613	82,719	14%	484
626	76,973	13%	28
539	64,511	11%	528
537	53,608	9%	369
635	48,929	9%	204
611	30,661	5%	463

2022 Commercial Bluefish Catch - VTRs

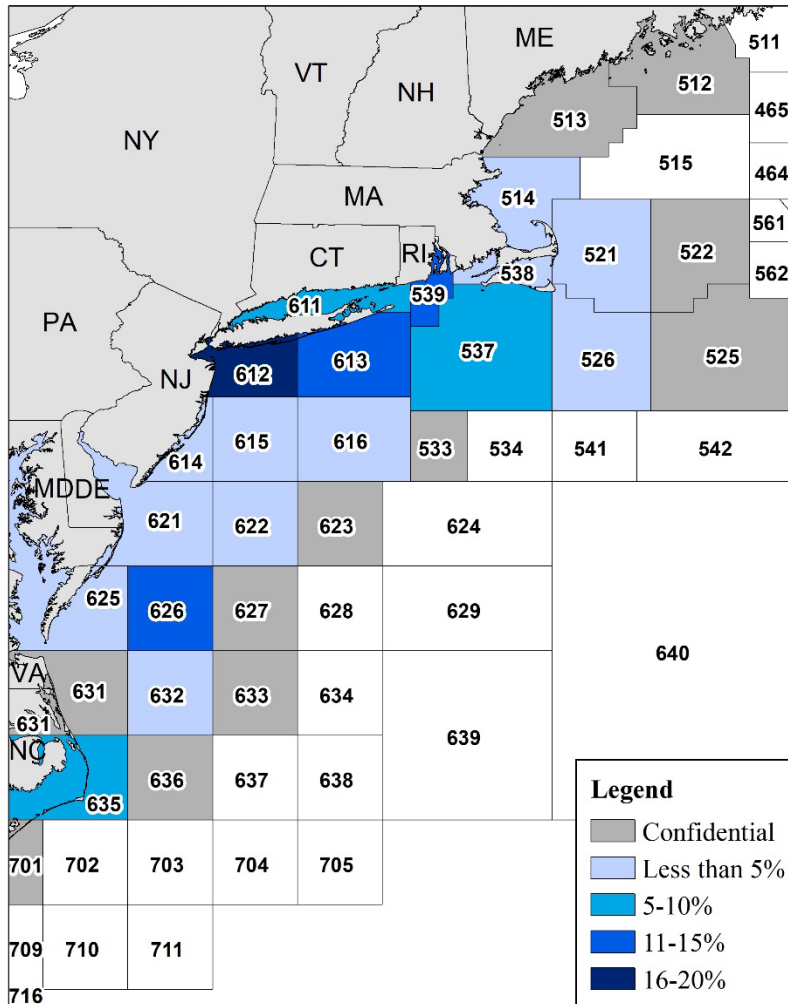


Figure 5. Proportion of bluefish catch by NMFS Statistical Area in 2022 based on federal VTR data. The amount of catch not reported on federal VTRs (e.g., catch from vessels permitted to fish only in state waters) is unknown.

The top commercial landings ports for bluefish in 2022 are shown in Table 6. Five ports qualified as "top bluefish ports," i.e., those ports where 100,000 pounds or more of bluefish were landed. Hatteras, NC landed the most commercial bluefish with 273,871 pounds landed. The ports and communities that are dependent on bluefish are described in Amendment 1 to the FMP (available at <http://www.mafmc.org/fisheries/fmp/bluefish>). Additional information on "Community Profiles for the Northeast US Fisheries" can be found at http://www.nefsc.noaa.gov/read/socialsci/community_profiles/.

According to dealer data, commercial vessels landed about 2.14 million pounds of bluefish valued at approximately \$1.87 million in 2022. Average coastwide ex-vessel price of bluefish was \$0.87 per pound in 2021, a \$0.07 decrease from the previous year (2021 price = \$0.94 per pound). A time series of bluefish revenue and price is provided in Figure 6.

Table 6. Bluefish landings in pounds for top ports (landings > 100,000 pounds) based on NMFS 2022 dealer data (cfders).

Port	Pounds	% of total commercial landings	# vessels
Hatteras, NC	273,871	13%	<10
Wanchese, NC	264,359	12%	12
Point Judith, RI	175,841	8%	93
Montauk, NY	160,317	7%	71
Provincetown, MA	100,299	5%	<10

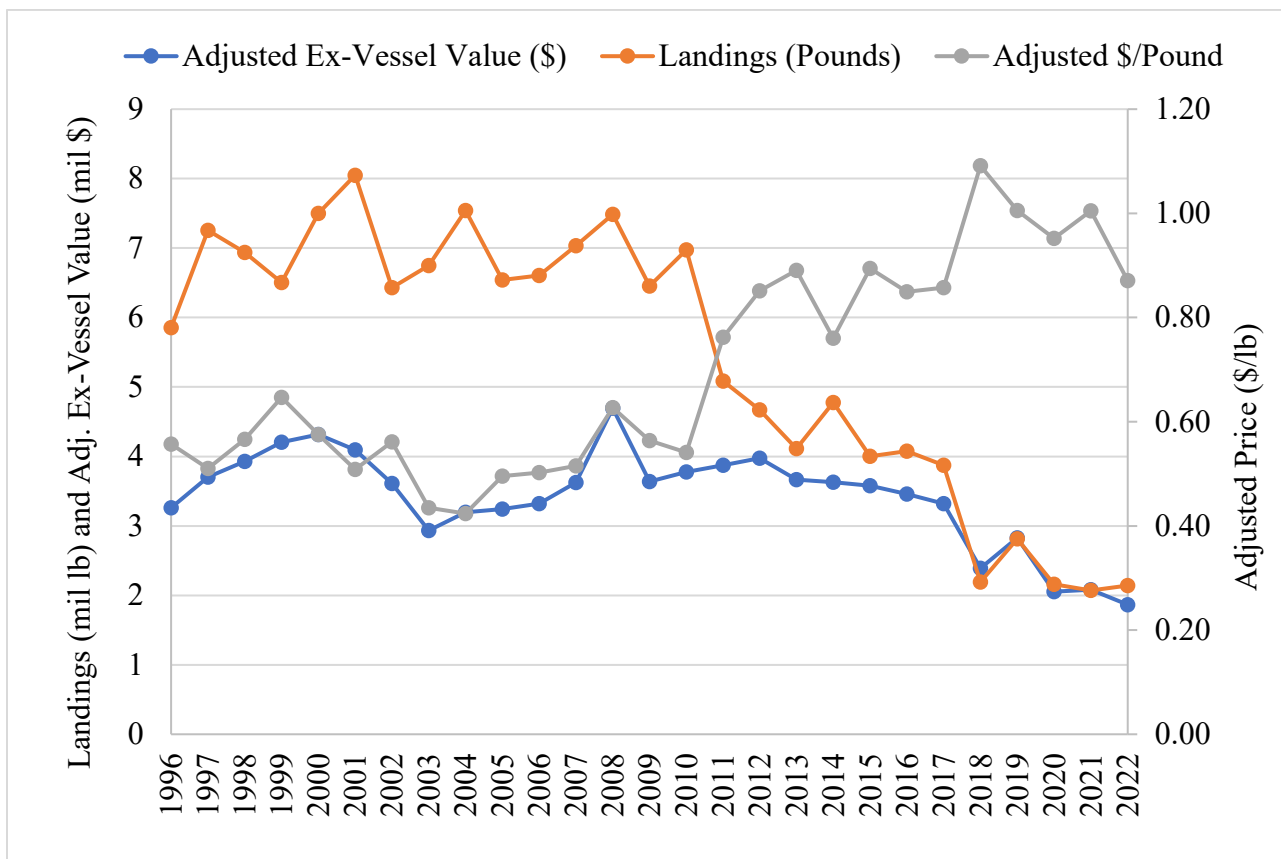


Figure 6. Bluefish commercial landings (in millions of pounds), ex-vessel value, and price per pound (adjusted to 2022 real dollars) from 1996-2022.

Bycatch species caught on bluefish targeted trips based on observer data are shown in Table 7. The commercial bluefish fishery is primarily prosecuted with gillnets and handlines, although there are other small localized fisheries, such as the beach seine fishery that operates along the Outer Banks of North Carolina. Many of these fisheries do not fish exclusively for bluefish, but target a combination of species including croaker, mullet, Spanish mackerel, spot, striped bass, and weakfish. Given the mixed-species nature of the bluefish fishery, incidental catch of non-target species is not directly attributable to the bluefish fishery.

Table 7. Percent of top commercial non-target species caught (kept or discarded) by weight on observed trips where bluefish was either target species 1 or 2 from 2018-2022. Source: Observer data retrieved April 2022.

Species	% by weight
Smooth dogfish	10%
Scup	4%
Striped bass	3%
Spiny dogfish	2%
Atlantic bonito	2%
Black sea bass	1%

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