



Butterfish Fishery Information Document

April 2024

This document provides an overview of the biology, stock condition, management system, and fishery performance for butterfish, with an emphasis on 2023. Data sources for Fishery Information Documents include unpublished National Marine Fisheries Service (NMFS) survey, dealer, vessel trip report (VTR), permit, and Marine Recreational Information Program (MRIP) databases and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 additional resources, including previous Fishery Information Documents, please visit <http://www.mafmc.org/msb>.

Key Facts

- Landings have been variable and well below the quota in recent years. 2023 landings and revenues were up compared to 2022. The average ex-vessel price for butterfish decreased from 2022 to 2023.
- The 2022 management track assessment found that butterfish was neither overfished nor experiencing overfishing, and biomass in 2021 was above the biomass target. Another management track assessment is underway and should be available in July 2024.
- Considerable variability is expected in abundance, availability, and landings due to butterfish's relatively short lifespan, environmental factors, and market conditions.
- R/V Bigelow indices are provided at the end of this document. 2022 values (both spring and fall) were the highest in the 2009-2022 time series. The pending management track assessment should use data through 2023.

Basic Biology

Atlantic butterfish is a semi-pelagic/semi-demersal loose-schooling fish species primarily distributed between Nova Scotia, Canada and Florida. They are most abundant from the Gulf of Maine to Cape Hatteras. They winter near the edge of the continental shelf and migrate inshore in the spring and offshore in the fall.

Butterfish are relatively short-lived and grow rapidly; few individuals live beyond 3 years. The maximum age reported is 6 years. The recent assessment re-evaluated median length (L50) at maturity and median age at maturity (A50). For both females and males, the median length at maturity was just over 11 cm and the median age at maturity was about 3/4 of one year.

See the 2022 Research Track Assessment report (long version) for more life history information at: https://apps-nefsc.fisheries.noaa.gov/saw/sasi/sasi_report_options.php.

Status of the Stock

Based on the 2022 management track assessment (MTA), the status of butterfish in 2021 was not overfished, with no overfishing occurring, and the stock size was above the target (available at https://apps-nefsc.fisheries.noaa.gov/saw/sasi/sasi_report_options.php). (Figure 1). Updated R/V Bigelow trawl indices are provided further below.

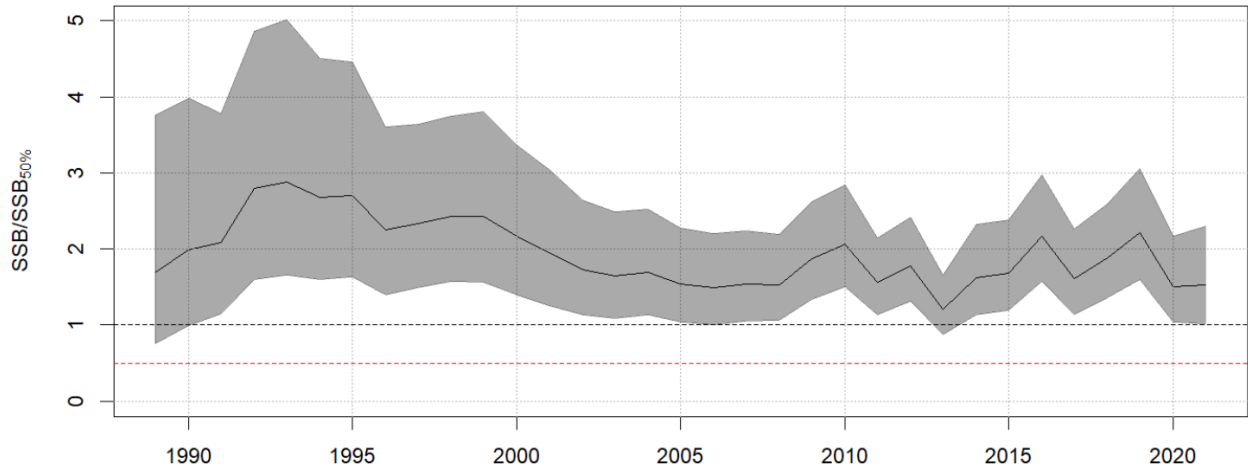


Figure 1. Butterfish stock status, 1989–2021, relative to the current biological reference points, biomass target = “1” or 39,436 MT (upper horizontal dashed line) and overfished threshold = 0.5 or 19,718 MT (lower horizontal dashed line).

Management System and Fishery Performance

Management

The Mid-Atlantic Fishery Management Council (the Council or MAFMC) established management of butterfish in 1978 and the management unit includes all federal East Coast waters.

Limited access commercial vessels can fish year-round until quotas are achieved, subject to applicable gear requirements. If landings get within 1,000 MT of the quota, a 5,000-pound trip limit is implemented to slow the fishery and avoid having to go to the lower 600-pound trip limit that is implemented once the full quota is reached. Incidental permits are limited to 600 pounds per trip.

Recreational landings are negligible. There are no recreational regulations except party/charter vessels need permits to catch/possess butterfish in federal waters, and any vessel that has any Mid-Atlantic party/charter permit must report ALL catch on ALL trips via Vessel Trip Reports.

Additional summary regulatory information is available at <https://www.fisheries.noaa.gov/region/new-england-mid-atlantic>.

2023-2024 specifications, as previously adopted, are described in Table 1 below.

Table 1. 2023-2024 Butterfish Specifications

	Specification	2023	2024	Rationale Summary
	OFL	17,631	16,096	from projections
a	ABC	17,267	15,764	from SSC, scientific uncertainty
b	ACT Buffer %	5%	5%	for management uncertainty
c	ACT Buffer	863	788	a times b
d	ACT (a-c)	16,404	14,976	a-c
e	Butterfish Cap (longfin discards)	3,884	3,884	set by Council
f	Assumed other discards	1,248	1,248	2013-2021 average plus 1 SD
g	Total discard set-aside	5,132	5,132	e+f
h	Landings or "Domestic Annual Harvest" (DAH)	11,271	9,844	d-g
i	Close primary directed at this amount, i.e. with 1,000 mt left; go to 5,000 pound trip limit	10,271	8,844	h-1000

Commercial Fishery

Figure 2 below, from the 2022 assessment, describes U.S. butterfish catches 1989-2021. Following, Figures 3-4 describe domestic landings, ex-vessel revenues and prices (inflation adjusted) since 1996. The Gross Domestic Product Implicit Price Deflator was used to report revenues/prices in “2023 dollars.” Table 2 describes 2023 butterfish landings by state. Most landings are made with bottom trawl gear. Table 3 describes 2023 butterfish landings by NMFS Statistical Area as reported in CAMS (Figure 5 shows where the NMFS Statistical Areas are located).

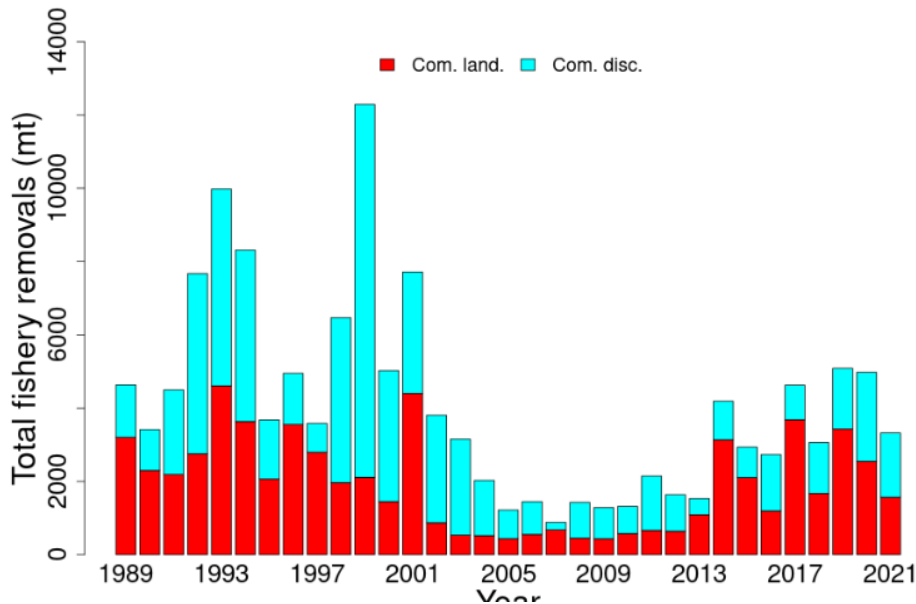


Figure 2. Total commercial catch of butterfish between 1989 and 2021 (landings and discards).

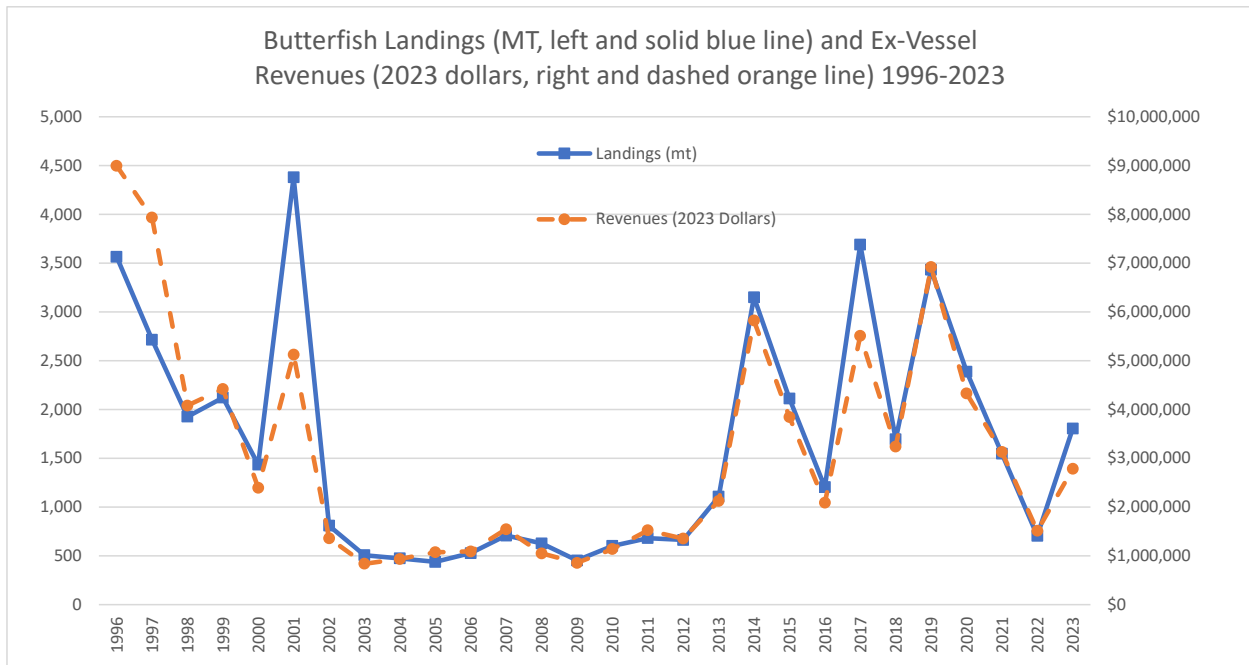


Figure 3. U.S. Butterfish Landings and Butterfish Ex-Vessel Values 1996-2023. Source: NMFS unpublished dealer data.

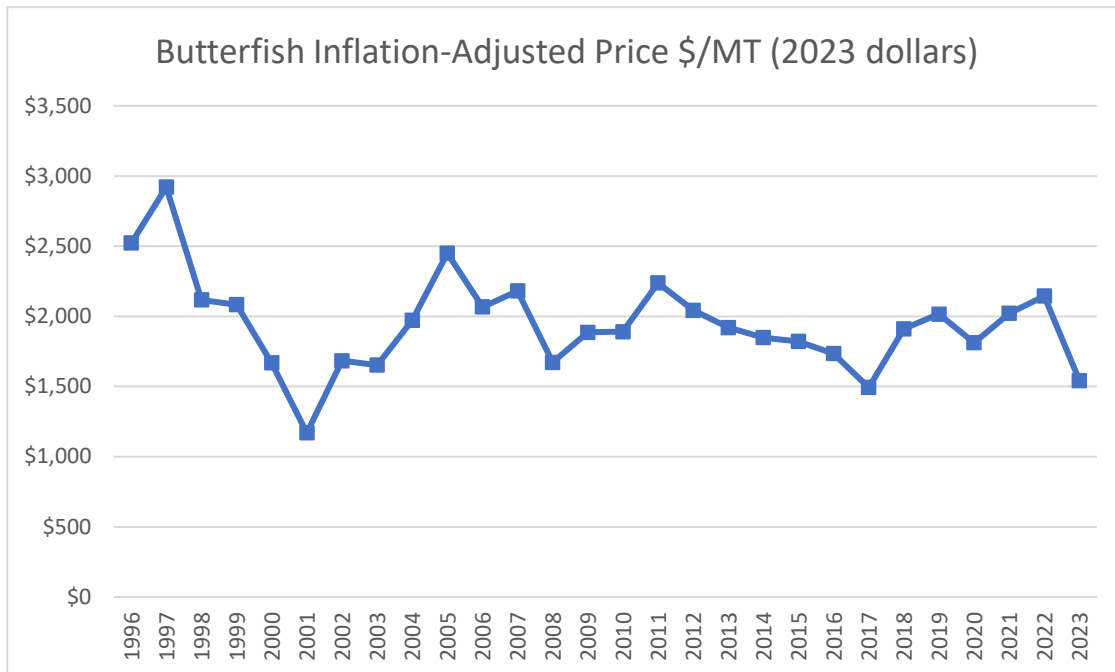


Figure 4. Ex-Vessel Butterfish Prices 1996-2023 Adjusted to 2023 Dollars Source: NMFS unpublished dealer data.

Table 2. Commercial Butterfish landings by state in 2023. Source: NMFS unpublished dealer data.

State	Metric Tons
RI	1,500
NY	170
MA	61
NJ	52
CT	17
Other	3
Total	1,805

Table 3. Commercial butterfish landings by NMFS statistical area in 2023. Source: CAMS

AREA	Metric Tons
537	847
526	248
616	195
539	172
611	106
613	49
Other/CI	214
Total	1,832

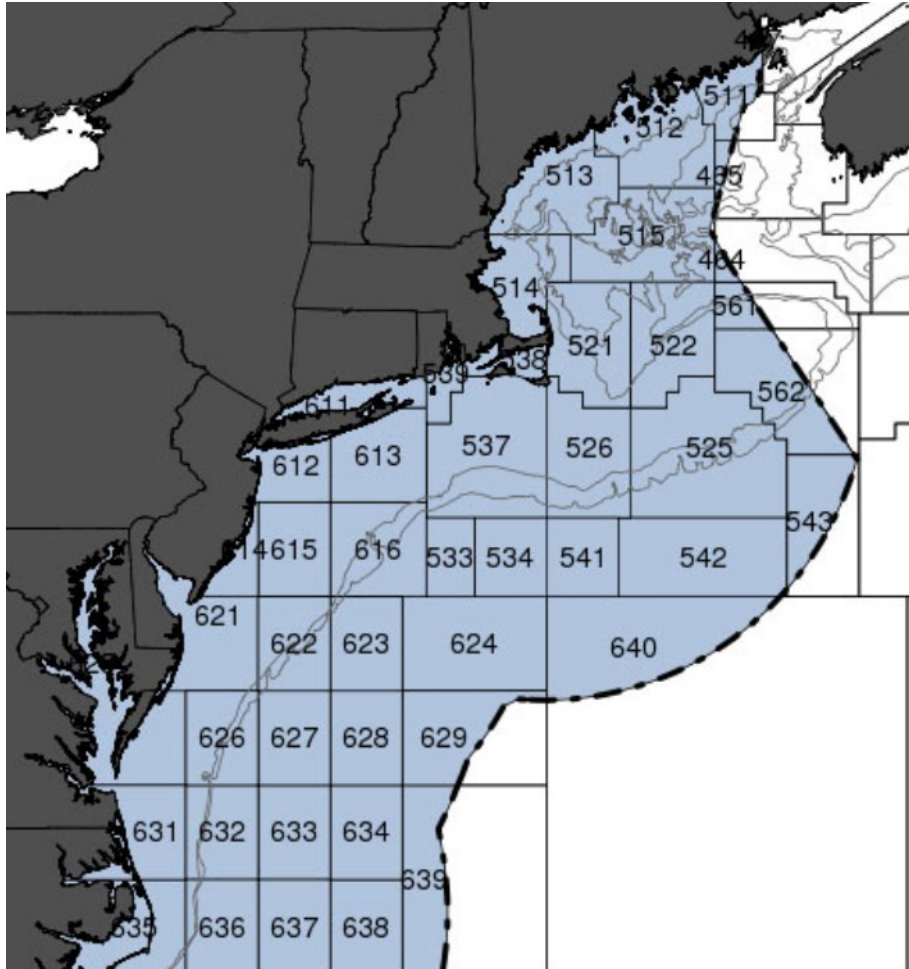


Figure 5. NMFS Statistical Areas

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Data updates from NMFS Northeast Fisheries Science Center (NEFSC)

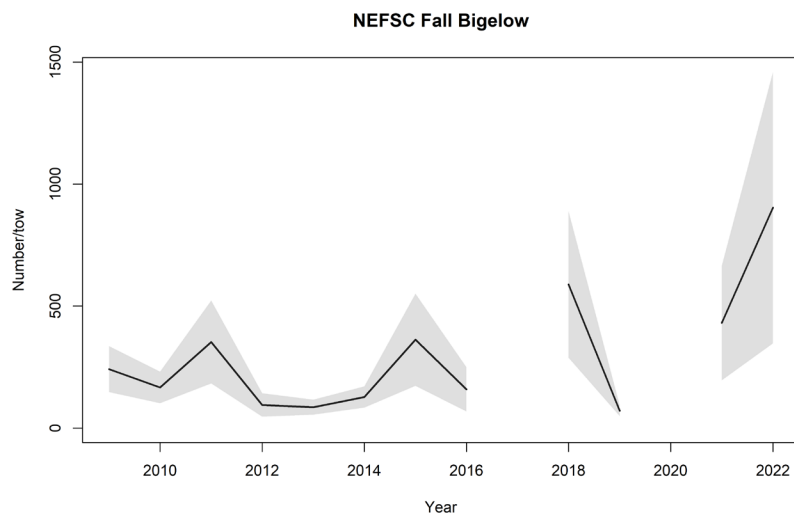
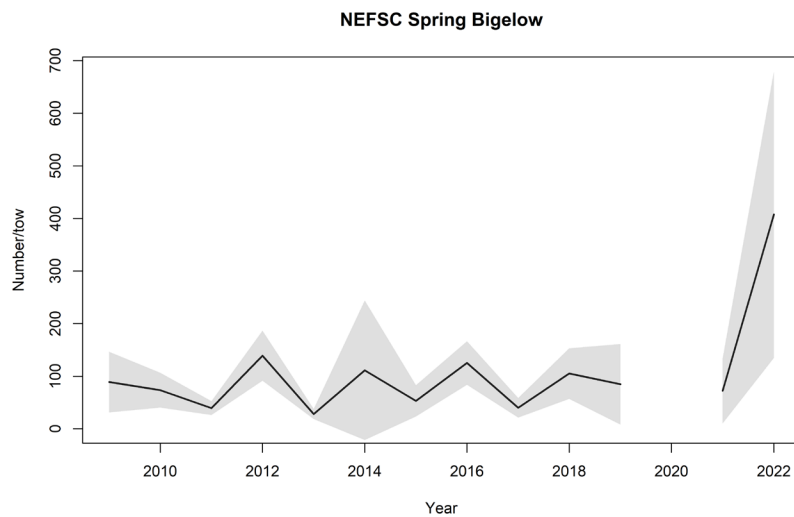
Bigelow indices for butterfish with 90% confidence intervals are below. Notes are from Chuck Adams, NEFSC butterfish lead. Butterfish has a management track assessment underway that will be available in July 2024, so these data have not been refreshed from 2023.

Spring 2022 Notes

- Had 3 of the 10 biggest tows in the time series (including the biggest)
- 2nd highest percent positive in the time series (48.3%)
- 3rd highest bottom temperature in the spring time series (8.4°C)

Fall 2022 Notes

- Had 2 of the 10 biggest tows in the time series
- Highest percent positive in the time series (88.1%)
- 4th highest bottom temperature in the fall time series (12.8°C)



Non-Target Species – Directed Butterfish Fishery (summarized from draft Environmental Assessment (EA) for 2021-2022 Butterfish Specifications)

Staff was directed to include available discard information as part of all 2023 specifications processes. Since the Standardized Bycatch Reporting Methodology focuses on **discards of managed stocks** rather than discards in managed fisheries, staff analyses of discards vary fishery by fishery depending on data availability and historical practices. The EA for 2021-2022 butterfish specifications used discard ratios and recent landings to develop approximate bycatch amounts for various species encountered in the butterfish fishery. Due to reduced observer coverage in 2020-2022 (from COVID-19), observer data from 2017-2019 are still used for this document. Landings in recent years have been less than levels used in the extrapolations below (2020-2022 average of about 1,600 MT vs 2,900 MT over 2017-2019), but landings could increase going forward and one would expect a similar mix of species.

From 2017-2019 there were on average 22 observed trips annually where butterfish accounted for at least 50% of retained catch, and those trips form the basis of the following analysis. These trips made 267 hauls of which 93% were observed.

Using the discard ratio data from these observed hauls and 2017-2019 butterfish landings, Table 1a below approximates annual discards in the directed butterfish fishery from 2017-2019, for species with extrapolated catch of at least 10,000 pounds. The method used for the estimates in the table is a custom staff analysis, and is best considered as a relative indicator of discard species that may be affected by the fishery. On the trips identified in this analysis, the 2017-2019 overall discard rate was 17%. Species noted with a “*” were overfished, rebuilding, or otherwise depleted when the 2021-2022 Specifications EA was written.

The observer program creates individual animal records for some fish species of interest, mostly larger pelagics and/or elasmobranchs, as well as tagged fish. Non-expanded counts of these individual fish records from the same trips are provided in Table 2a below.

Table 1a. Incidental Catch and Discards in the Butterfish Fishery.

NE Fisheries Science Center Common Name	Pounds Observed Caught	Pounds Observed Discarded	Of all discards observed, percent that comes from given species	Percent of given species that was discarded	Pounds of given species caught per mt Butterfish Kept	Pounds of given species discarded per mt butterfish Kept	Rough Annual Catch (pounds) based on 3-year (2017-2019) average of butterfish landings (2,933 mt)	Rough Annual Discards (pounds) based on 3-year (2017-2019) average of butterfish landings (2,933 mt)
BUTTERFISH	1,153,015	101,677	37%	9%	2,418	213	7,091,225	625,330
SQUID, ATL LONG-FIN	167,780	1,836	1%	1%	352	4	1,031,876	11,290
SQUID, SHORT-FIN	52,988	6,638	2%	13%	111	14	325,885	40,825
DOGFISH, SPINY	37,318	37,314	14%	100%	78	78	229,511	229,485
SCUP	37,271	28,763	11%	77%	78	60	229,222	176,898
HAKE, SILVER (WHITING	23,422	10,728	4%	46%	49	22	144,051	65,981
SKATE, LITTLE	15,201	15,125	6%	99%	32	32	93,490	93,021
SKATE, WINTER (BIG)	13,098	10,466	4%	80%	27	22	80,552	64,367
HAKE, SPOTTED	8,871	6,746	2%	76%	19	14	54,560	41,490
FLOUNDER, SUMMER (FLU	7,194	3,530	1%	49%	15	7	44,246	21,709
SEA ROBIN, NORTHERN	6,922	6,922	3%	100%	15	15	42,571	42,571
DOGFISH, SMOOTH	5,155	4,380	2%	85%	11	9	31,703	26,938
SEA BASS, BLACK	4,617	3,270	1%	71%	10	7	28,397	20,111
SEA ROBIN, STRIPED	3,922	3,891	1%	99%	8	8	24,118	23,933
HAKE, RED (LING) *	3,690	2,434	1%	66%	8	5	22,694	14,969
SKATE, CLEARNOSE	3,071	3,071	1%	100%	6	6	18,885	18,885
MENHADEN, ATLANTIC	2,329	2,040	1%	88%	5	4	14,324	12,545
WEAKFISH *	2,250	2,006	1%	89%	5	4	13,835	12,337
FLOUNDER, WINTER *	2,028	2,015	1%	99%	4	4	12,472	12,390
BLUEFISH *	1,898	1,395	1%	74%	4	3	11,674	8,581
SKATE, BARNDOR	1,774	1,774	1%	100%	4	4	10,910	10,910
FLOUNDER, SAND DAB *	1,765	1,765	1%	100%	4	4	10,856	10,856
FLOUNDER, FOURSPOT	1,724	1,724	1%	100%	4	4	10,602	10,602
ALEWIFE *	1,684	1,682	1%	100%	4	4	10,359	10,347

Table 2a. Counts of fish in Individual Animal Records on observed butterfish trips from 2017-2019

COMNAME	count
BONITO, ATLANTIC	1
MOLA, OCEAN SUNFISH	2
RAY, TORPEDO	4
SHARK, BASKING	1
SHARK, BLUE (BLUE DOG	1
SHARK, PORBEAGLE (MAC	7
STINGRAY, BLUNTNOSE	2
STURGEON, ATLANTIC	3
TUNA, LITTLE (FALSE A	4

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