



Atlantic Mackerel Fishery Information Document

April 2024

This Fishery Information Document provides a brief overview of the biology, stock condition, management system, and fishery performance for Atlantic mackerel (“mackerel” hereafter), 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 Data sources for Fishery Information Documents include unpublished National Marine Fisheries Service (NMFS) survey, dealer, vessel trip report (VTR), permit, and Marine Recreational Information Program (MRIP) databases and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 more resources, including previous Fishery Information Documents, please visit <http://www.mafmc.org/msb>.

Key Facts

- Mackerel began a rebuilding program on November 29, 2019. A 2023 management track assessment indicated failure of the stock to rebuild through 2022.
- 2024-2025 specifications were implemented in April 2024 with an Acceptable Biological Catch (ABC) of 3,200 metric tons (MT) and a commercial quota of 868 MT (same for both years). Assessment projections indicate these specifications/catches will still facilitate a 61% probability of rebuilding the stock by 2032.
- The next U.S. and Canadian assessments are anticipated in 2025.
- Mackerel landings, revenues, and average price increased in 2023 compared to 2022.
- Recreational catch estimates rebounded in 2023 to around 2018-2021 levels after lower catch in 2022.

Basic Biology

Mackerel is a semi-pelagic/semi-demersal (may be found near the bottom or higher in the water column) schooling species, primarily distributed historically between Labrador (Newfoundland, Canada) and North Carolina. The stock is considered to comprise two spawning contingents: a northern contingent spawning primarily in the southern Gulf of St. Lawrence and a southern contingent spawning in the Mid-Atlantic Bight, Southern New England and the western Gulf of Maine. The two contingents mix during winter months on the Northeast U.S. shelf. The Canadian fishery likely primarily catches the northern contingent while the U.S. fishery appears to catch both contingents.

Mackerel spawning occurs during spring and summer and progresses from south to north as surface waters warm. Atlantic mackerel are serial, or batch spawners. Eggs are pelagic. Post-larvae gradually transform from planktonic to swimming and schooling behavior at about 30-50

mm. Almost all fish are mature by age 3 in most years. Age 2 maturity appears to vary between around 50% to nearly 100%. Atlantic mackerel are opportunistic feeders that can ingest prey either by individual selection of prey organisms or by passive filter feeding. See <https://www.nefsc.noaa.gov/nefsc/habitat/efh/> for more life history information.

Status of the Stock

Based on a 2018 assessment (NEFSC 2018, available at <http://www.mafmc.org/ssc-meetings/2018/may-8-9>), the mackerel stock was declared overfished, with overfishing occurring based on data through 2016. Compared to the 2021 Mackerel management track assessment (MTA) used for the preceding specifications, which considered data and estimated mackerel stock size through 2019, the 2023 Mackerel MTA found that the stock in 2019 was 45% lower than originally estimated (spawning stock biomass (SSB) of 23,505 MT versus 42,862 MT). The terminal 2022 year in the 2023 Mackerel MTA was estimated at 19,017 MT so the stock remains overfished, with spawning stock biomass estimated to be at about 12% of the biomass target. The 2023 MTA and related documents may be found at <https://www.mafmc.org/ssc-meetings/october-30-2023>.

Historical assessments (which used different methods and data) appear to have been substantially over-optimistic about the stock's productivity: for example the 1997 mackerel allowable biological **catch** was specified about **ten times higher than** what we now think the **total SSB** was in that year.

A 2023 Canadian assessment¹ showed the Northern Mackerel Contingent continued a decline from 2020 to 2021/2022 (to all-time lows). The Canadian and U.S. assessments share much of the same data but the U.S. assessment combines the Canadian egg data with egg data collected by a U.S. Ecosystem Monitoring survey conducted in late May and June (in addition to other data).

Management System and Fishery Performance

Management

The Mid-Atlantic Fishery Management Council (the Council or MAFMC) established management of mackerel in 1978 and the management unit includes all federal East Coast waters. Expected Canadian landings are deducted from the total Acceptable Biological Catch (ABC) that is recommended by the Council's Scientific and Statistical Committee (SSC), but there is no formal sharing agreement. The 2024-2025 U.S. specifications generally assume Canada will keep its fishery closed for those years.

Access is limited with several tiers generally having different trip limits. Stricter trip limits are triggered when the quota is approached. Additional summary regulatory information is available at <https://www.fisheries.noaa.gov/region/new-england-mid-atlantic>.

After the initial rebuilding plan appeared infeasible due to slow stock growth, a revised rebuilding plan was implemented for 2023 to achieve a 61% probability of rebuilding the stock by 2032. The reduced 2024-2025 specifications are estimated to facilitate the same 61% probability of

¹ <https://waves-vagues.dfo-mpo.gc.ca/library-bibliotheque/41111126.pdf>

rebuilding the stock by 2032 given the rebuilding failure indicated in the 2023 MTA. Because of the low commercial quota, the 2024-2025 specifications implemented reduced mackerel trip limits of 20,000 lb for all limited access permits and 5,000 lb for all open access permits. When 80 percent of the commercial quota is harvested, the trip limits will be further reduced to 10,000 lb for all limited access permits and 2,500 lb for open access permits. The recreational possession limit remained status quo at 20 fish per person.

Fisheries

Figure 1 describes mackerel catches (all known sources) 1960-2022 and highlights the scale of the early foreign fishery in the late 1960s and 1970s. Figures 2-3 describe domestic landings, ex-vessel revenues, and prices (inflation adjusted) since 1996. Domestic landings dropped dramatically from 2006-2011 and have been relatively low since. Prices have shown an increasing trend since 2001 and the price jump in 2022 may have been associated with the complete Canadian fishery closure in 2022. Figure 4 describes preliminary weekly landings throughout the year for 2024 and 2023.

Table 1 describes 2023 commercial mackerel landings by state and Table 2 describes 2023 commercial mackerel landings by gear type. Table 3 describes 2023 commercial mackerel landings by NMFS statistical area. While variable, the landings patterns are generally consistent with recent operation of the fishery.

Figure 5 describes 2018-2023 Atlantic mackerel recreational annual total catches (numbers of fish, VA-ME, all modes combined, all areas combined). Recreational catch estimates rebounded in 2023 to around 2018-2021 levels after lower catch in 2022. Most recreational catch is retained, most occurs in the private/rental mode, and most catch occurs in state waters (predominantly Massachusetts, New Hampshire, and Maine). Data after 2018 are not affected by calibrations that were applied to earlier data due to methods changes to the Marine Recreational Information Program (MRIP).

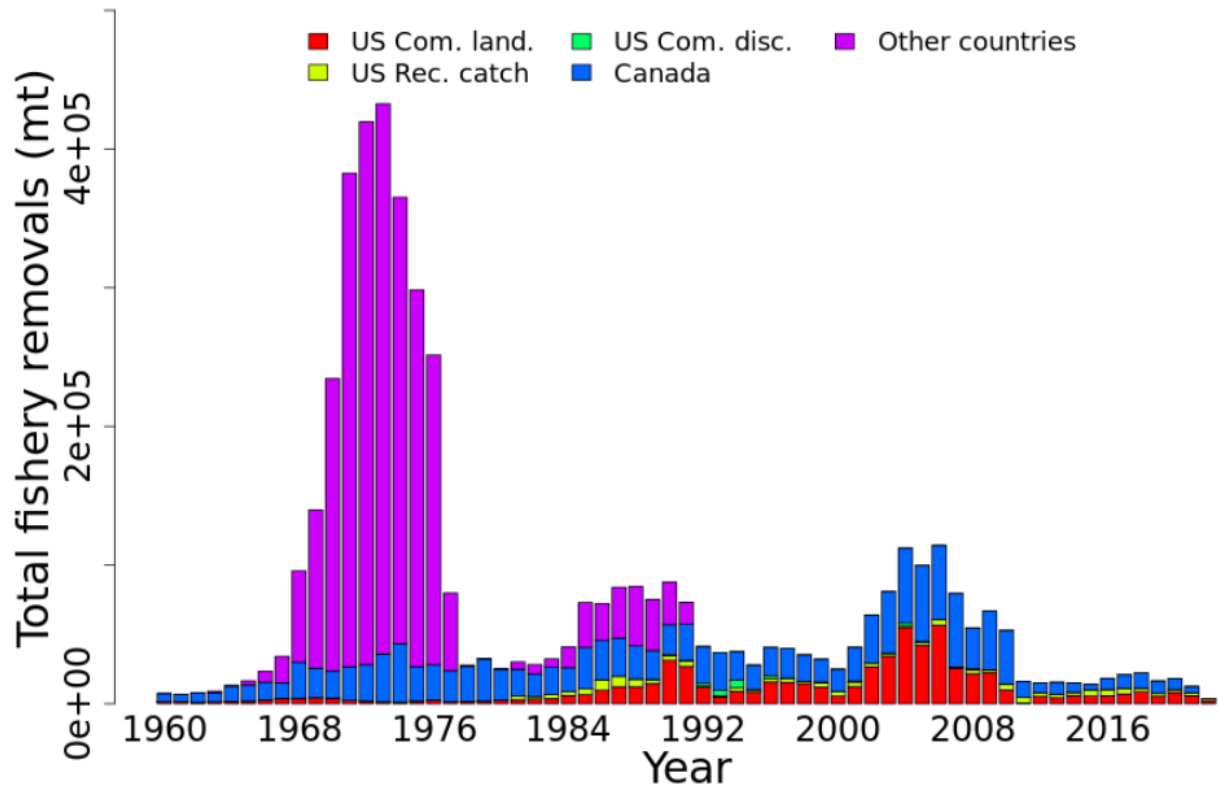


Figure 1. Total catch of northwest Atlantic mackerel between 1960 and 2022 by all known sources. U.S. recreational catch represents recreational landings plus discards, Canada represents Canadian landings (discards are not available), and other countries represents landings by all other countries.

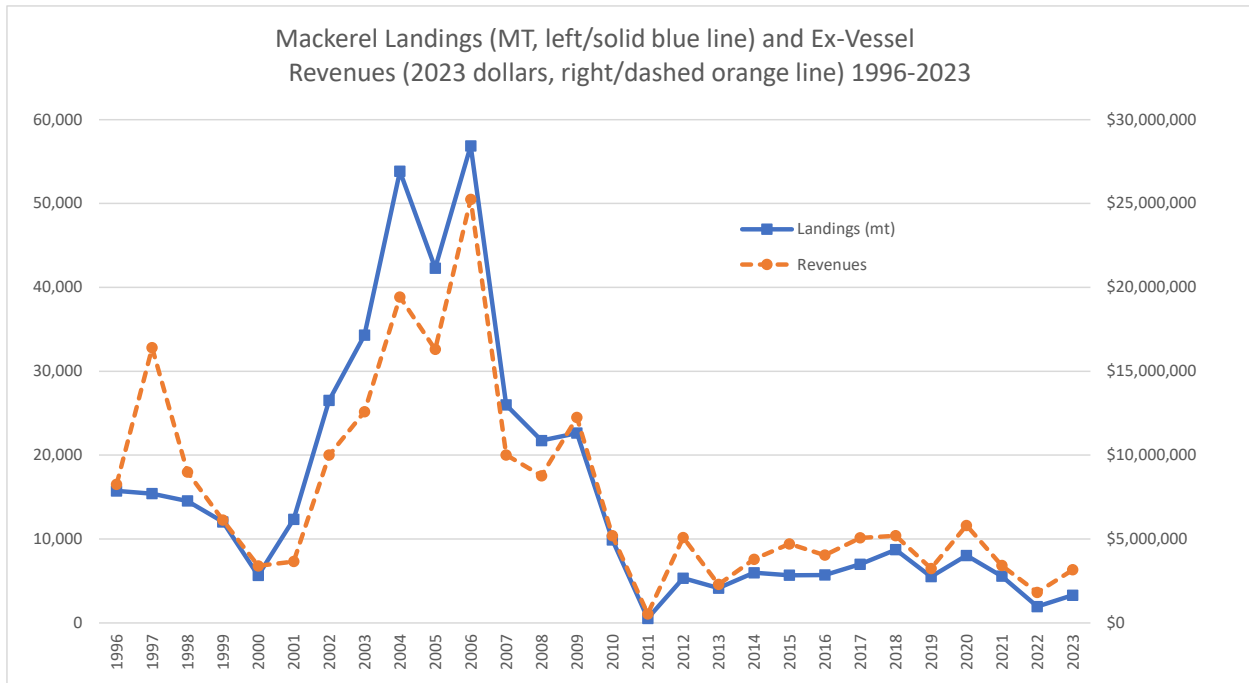


Figure 2. U.S. Mackerel Landings and Mackerel Ex-Vessel Values 1996-2023. Source: NMFS unpublished dealer data. [PRELIMINARY]

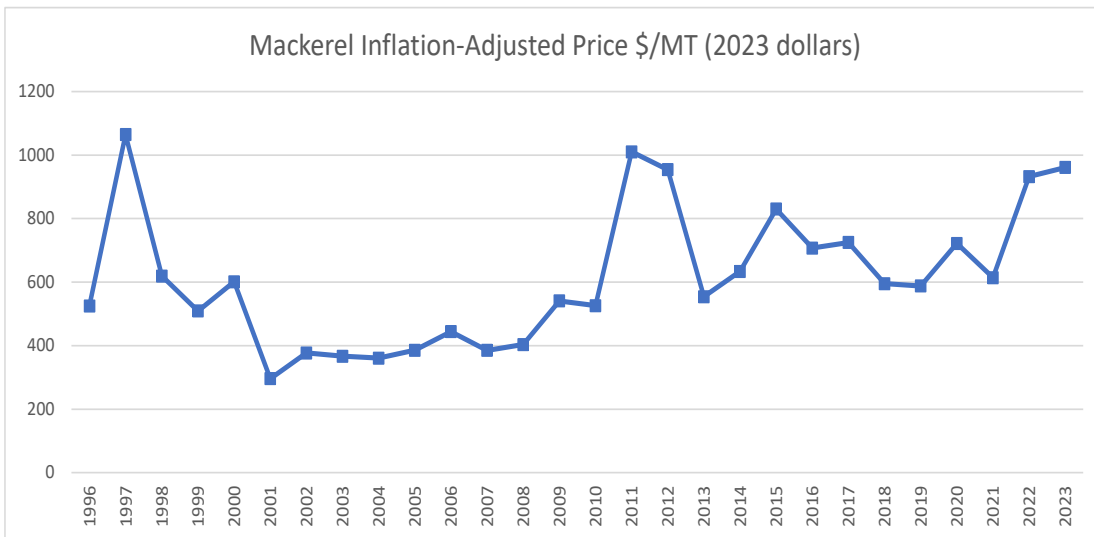


Figure 3. Ex-Vessel Mackerel Prices 1996-2023, Inflation-Adjusted to 2023 Dollars Source: NMFS unpublished dealer data. [PRELIMINARY]

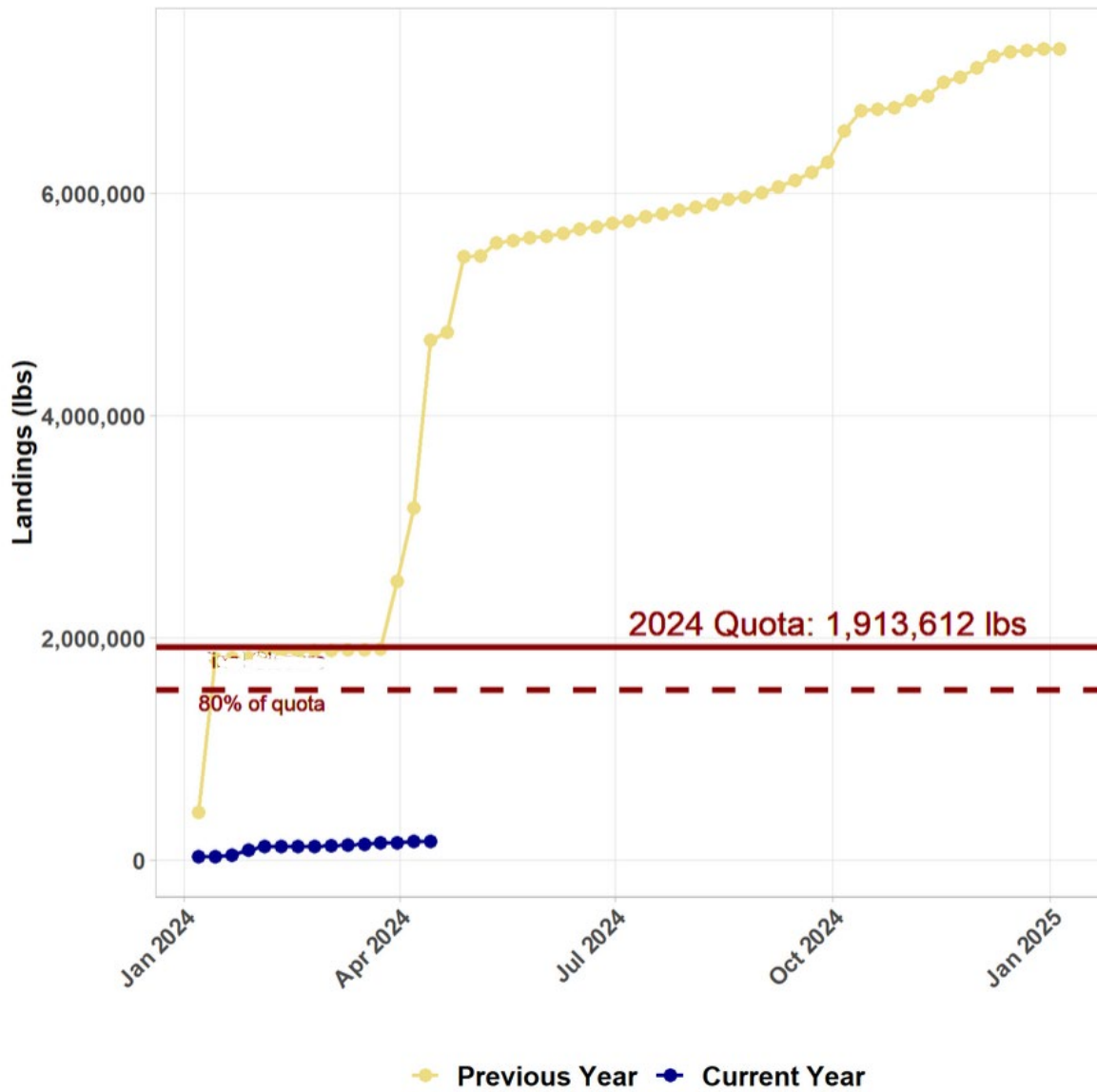


Figure 4. U.S. Preliminary Mackerel landings; 2024 in blue, 2023 in yellow-orange. Source: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region>.

Table 1. Commercial Mackerel landings (live weight) by state in 2023. Source: NMFS unpublished dealer data.

State	Metric Tons
MA	1,881
RI	1,027
ME	369
NY	14
Other	5
Total	3,295

Table 2. Commercial Mackerel landings (live weight) by gear in 2023. Source: NMFS unpublished dealer data.

GEAR	MT
TRAWL, OTTER, MIDWATER	1,453
TRAWL, OTTER, BOTTOM, FISH	1,021
Other	820
Total	3,295

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

AREA	Metric Tons
521	1,014
522	875
514	376
561	302
Other/CI	747
Total	3,314

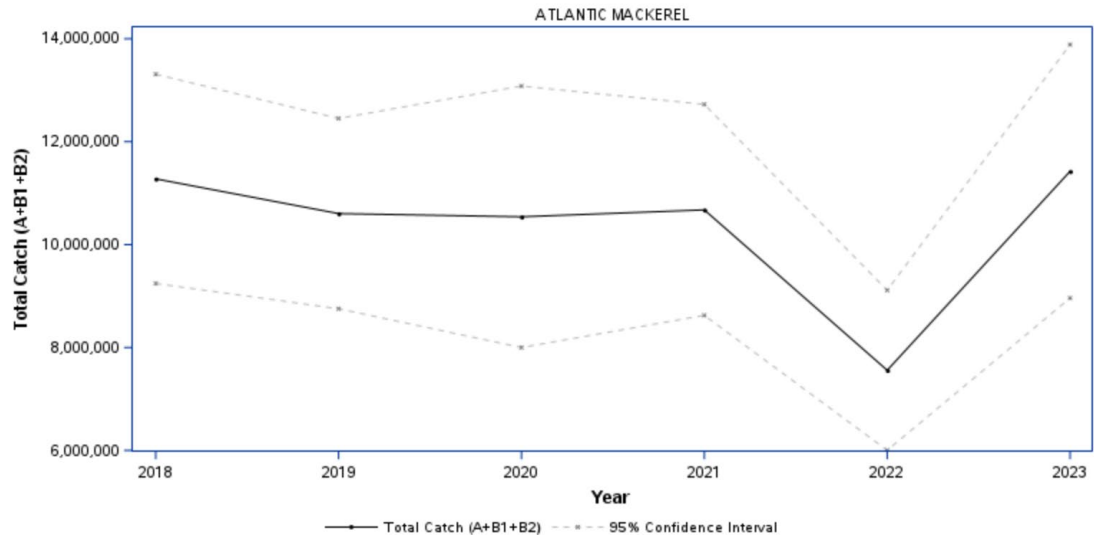


Figure 5. 2018-2023 Atlantic mackerel recreational total catches (numbers of fish), annual, VA-ME, all modes combined, all areas combined Source: NMFS MRIP query <https://www.fisheries.noaa.gov/data-tools/recreational-fisheries-statistics-queries>.

(Data after 2018 not affected by calibrations that must be applied to earlier data due to methods changes.)

Non-Target Catches and Discards

Environmental Assessments for mackerel specifications developed by staff include tables of incidental catches using a directed fishery definition of at least 50% of retained catch being mackerel. 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. Staff updated previous analyses using 2019-2022 data – 2020 data was severely impacted by Covid-19 but most observed mackerel trips would generally occur early in the year before 2020’s disruptions. There were only 14 total observed mackerel trips (as defined) during this time period.

Using discard ratio data from these observed hauls and 2019-2022 average mackerel landings (5,267 MT), Table 4 below approximates annual catch/discards in the directed mackerel fishery from 2019-2022, 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 species that may be affected by the fishery rather than precise amounts (especially given the low number of observed trips in this fishery). On the trips identified in this analysis, the 2019-2022 overall discard rate was 0.4 % (similar to previous analyses).

Preliminary weekly 2023/2022 river herring and shad (RH/S) cap performance is described in Figure 6 (next page).

The observer program creates individual records for some species of interest, mostly larger pelagics and/or less common sharks/rays, as well as tagged fish. However, on these trips only three unknown sharks and one bluefin tuna were noted.

Table 4. Mackerel Target/Non-Target Catches

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 mackerel Kept	Pounds of given species discarded per mt mackerel Kept	Rough Annual Catch (pounds) based on 4-year (2019-2022) average of mackerel landings (5,267 mt)	Rough Annual Discards (pounds) based on 4-year (2019-2022) average of mackerel landings (5,267 mt)
MACKEREL, ATLANTIC	2,238,955	321	2%	0%	2,205	0	11,613,397	1,663
HERRING, ATLANTIC	930,524	1,022	7%	0%	916	1	4,826,604	5,302
BUTTERFISH	20,760	3	0%	0%	20	0	107,680	16
MENHADEN, ATLANTIC	15,492	2	0%	0%	15	0	80,354	8
DOGFISH, SPINY	14,132	9,316	66%	66%	14	9	73,301	48,321
HERRING, BLUEBACK	14,098	892	6%	6%	14	1	73,124	4,628
HAKE, SILVER (WHITING)	7,601	21	0%	0%	7	0	39,427	110
ALEWIFE	6,094	50	0%	1%	6	0	31,608	258
FISH, NK	2,441	2,281	16%	93%	2	2	12,661	11,831

Report Run on: 2023-12-29
 Quota Year: 2023 (January 1, 2023 to December 31, 2023)

Catch Cap	Quota (mt)	Cumulative Catch (mt)	Percent Quota Caught
Atlantic Mackerel River Herring/Shad	129	105.9	82%

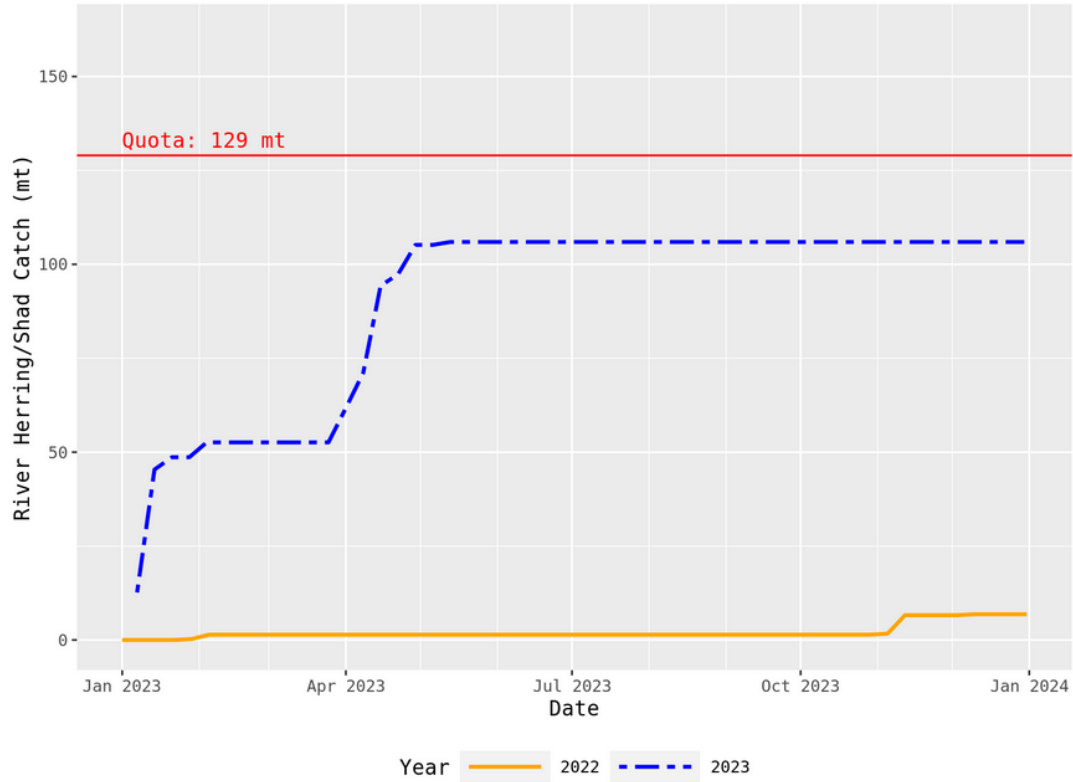


Figure 6. Preliminary Weekly RH/S Cap Monitoring; 2023 in blue, 2022 in yellow-orange. Source: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region>.

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