



## Atlantic Mackerel Fishery Information Document

February 2022

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 2021. Data sources for Fishery Information Documents include unpublished National Marine Fisheries Service (NMFS) survey, dealer, vessel trip report (VTR), permit, and Marine Recreational Information Program (MRIP) databases and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, which was designed to rebuild the stock by 2023. Based on the 2021 Management Track Assessment (MTA), the stock appears to have almost tripled from 2014 to 2019 (to 24% of rebuilt), but also appears unlikely to complete rebuilding by 2023. A revised rebuilding plan is under development.
- The 2017 recruitment estimate was the lowest in the time series and recruitment has been below the long term median since 2008 except for one year (the 2015 year class).
- In the new MTA, the estimated proxy for Maximum Sustainable Yield declined by 17% (to 34,103 metric tons (MT) annually) compared to the previous assessment.
- The new MTA’s conclusions are consistent with the 2021 Canadian assessment.
- The SSB estimates from the range-wide egg survey, a key index in the assessment, reached a minimum in 2010 and have been below the median since 2005.
- The fishery was not constrained by the river herring and shad (RH/S) cap in 2021, but NMFS closed the fishery based on the assessment results and Council request effective October 15, 2021.

### 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 the 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 in 2016. A new 2021 management track assessment (MTA) indicates that while trends since 2014 are positive, the stock is only 24% of the biomass rebuilding target. The productivity of the stock appears to have declined. In the recent MTA, the estimated proxy for Maximum Sustainable Yield declined by 17% to 34,103 metric tons (MT) compared to the previous assessment. Past assessments (which used different methods and data) appear to have been overly optimistic about the stock's productivity.<sup>1</sup>

## 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).

Access is limited with several tiers 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>.

At its May 2019 meeting, the SSC considered preliminary results from the 2019 Canadian Atlantic mackerel assessment, which indicated lower than expected recruitment in 2016-2018. The SSC determined that it would not be appropriate to recommend the original higher 2020 rebuilding ABC levels and the ABC has been 29,184 mt since. NMFS closed the primary directed fishery based on the assessment results and Council request effective October 15, 2021. An emergency rule should keep 2022 catches to around 2021 catches, about 12,000 MT. This would include about 4,200 MT for Canadian landings, 5000 MT for U.S. commercial landings, 2,600 MT for

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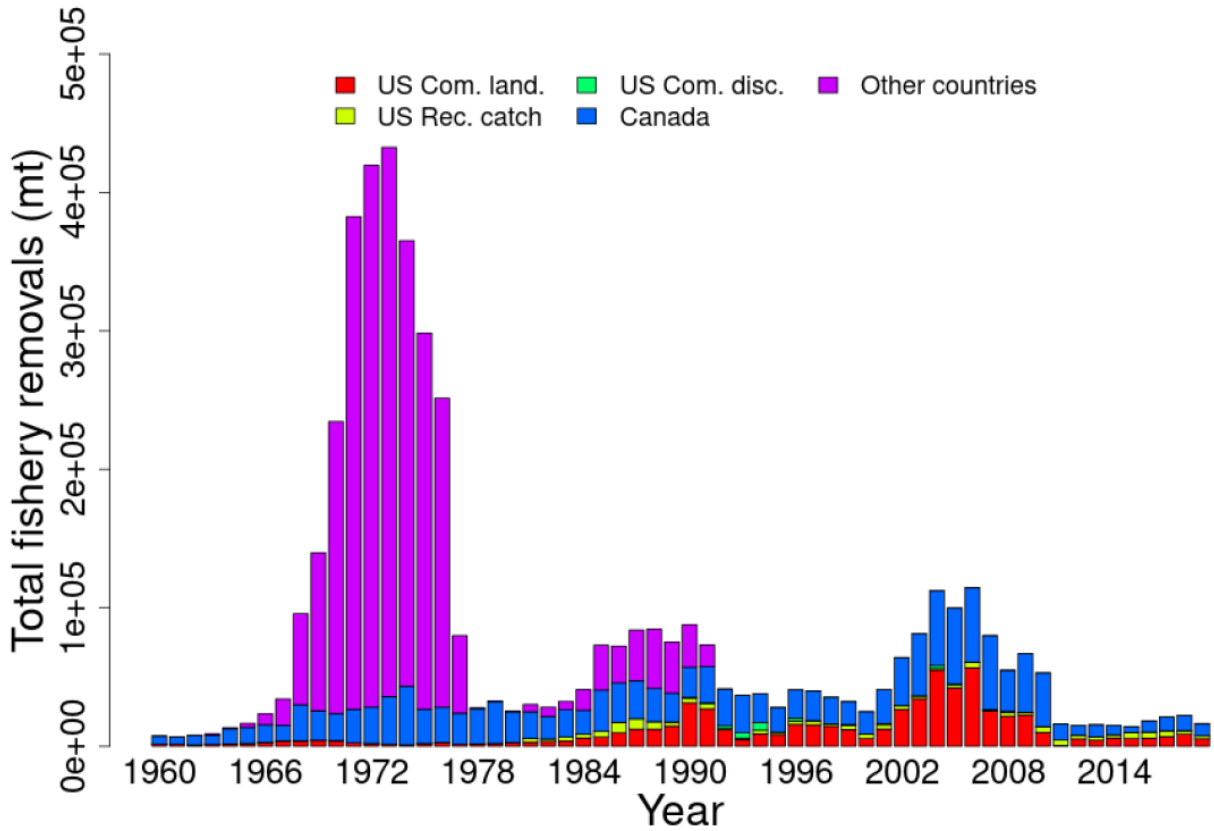
<sup>1</sup> Referencing 1997 Federal Register publications, the 1997 mackerel allowable biological **catch** was specified about **ten times higher than** what we now think the **total SSB** was in that year.

recreational catch, and small set-asides for commercial discards and management uncertainty. A revised rebuilding plan is under development, targeting January 1, 2023 for implementation.

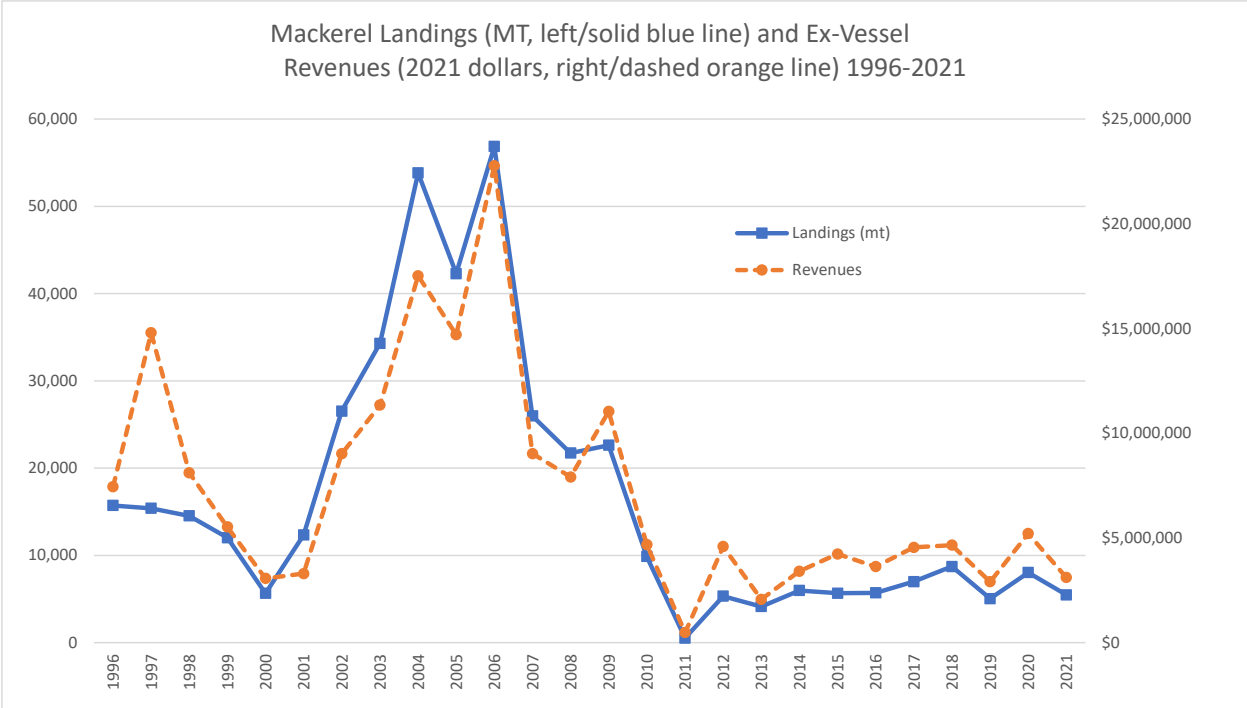
*Fisheries*

Figure 1 describes mackerel catches (all known sources) 1960-2019. Figures 2-3 describe domestic landings, ex-vessel revenues, and prices (inflation adjusted) since 1996. Figure 4 illustrates preliminary weekly landings throughout the year for 2021 and 2020.

Table 1 describes 2021 mackerel landings by state, and Table 2 describes 2021 mackerel landings by gear type. Table 3 describes 2021 mackerel landings by NMFS statistical area. Table 4 shows vessel participation over time in the mackerel fishery

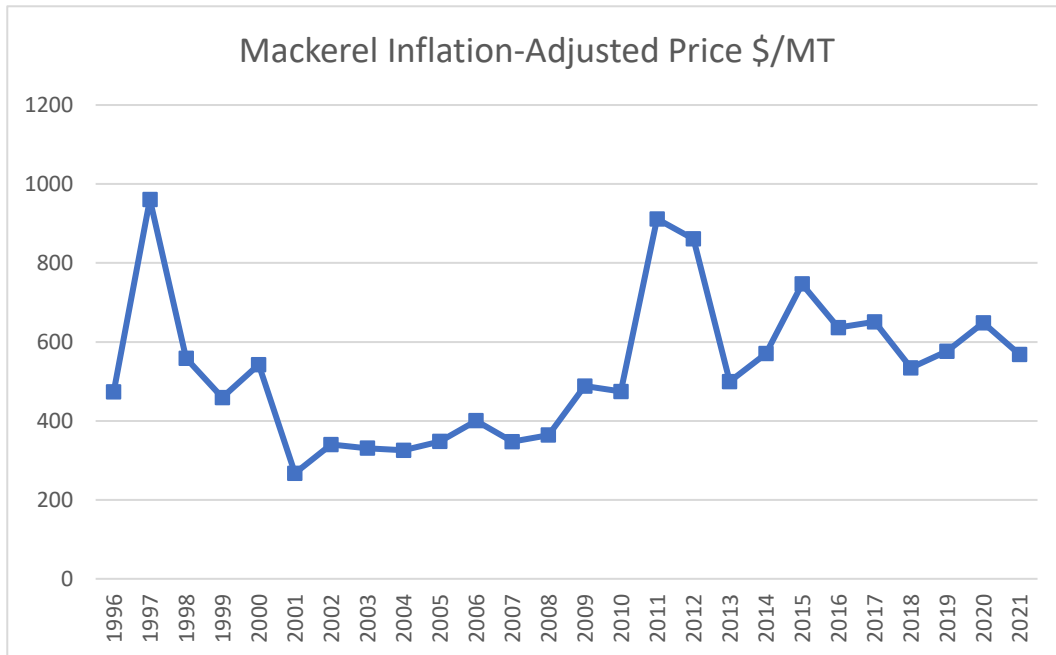


**Figure 1.** Total catch of northwest Atlantic mackerel between 1960 and 2019 by all known sources. U.S. recreational catch represents recreational landings plus discards, Canada represents Canadian landings (discards are not available), and other countries represents landings by all other countries.



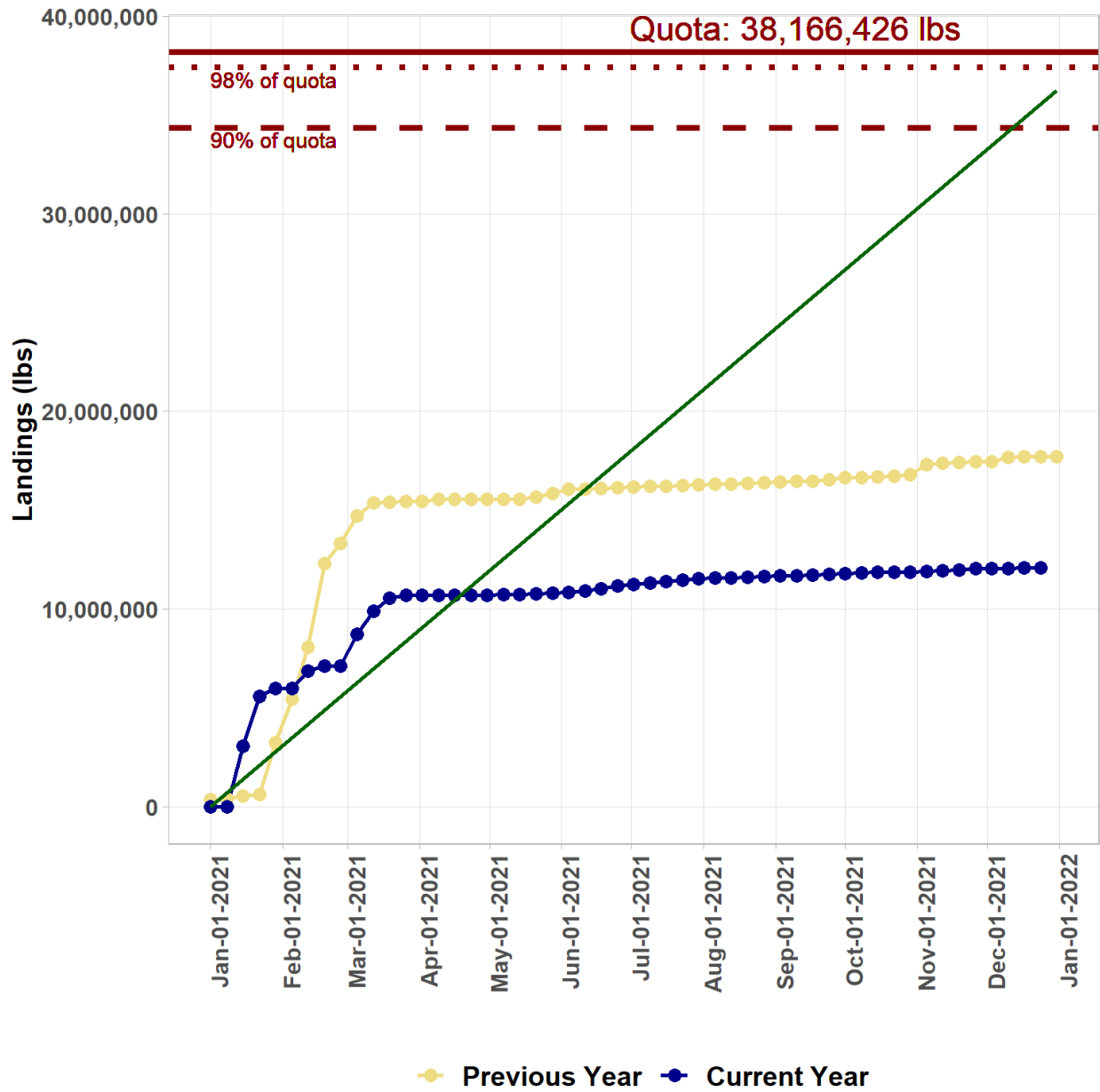
**Figure 2.** U.S. Mackerel Landings and Mackerel Ex-Vessel Values 1996-2021. Source: NMFS unpublished dealer data. [PRELIMINARY]

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**Figure 3.** Ex-Vessel Mackerel Prices 1996-2021 Adjusted to 2021 Dollars Source: NMFS unpublished dealer data. [PRELIMINARY]

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**Figure 4.** U.S. Preliminary Mackerel landings; 2021 in blue, 2020 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 2021. Source: NMFS unpublished dealer data.

State	Metric Tons
MA	4,287
ME	546
NJ	534
Other	110
Total	5,476

**Table 2.** Commercial Mackerel landings (live weight) by gear in 2021. Source: NMFS unpublished dealer data.

GEAR	MT
TRAWL,OTTER,MIDWATER	2,555
TRAWL,OTTER,MIDWATER PAIRED	1,595
TRAWL,OTTER,BOTTOM,FISH	730
LONGLINE, BOTTOM	233
GILL NET,SINK, OTHER	228
HAND LINE, OTHER	96
Other	40
Total	5,476

**Table 3.** Commercial mackerel landings by statistical area in 2021. Source: NMFS unpublished VTR data.

Stat Area	Metric Tons
522	2,023
521	1,854
612	992
514	450
Other/CI	332
Total	5,652

Table 4. Vessel participation over time in the Mackerel Fishery based on annual landings (pounds)

YEAR	Vessels 1 mil +	Vessels 100,000 - 1mil	Vessels 50,000 - 100,000	Vessels 10,000 - 50,000	Total
1982	0	10	10	43	63
1983	0	10	5	26	41
1984	0	11	14	29	54
1985	0	12	10	28	50
1986	1	10	5	37	53
1987	1	15	8	31	55
1988	2	20	8	40	70
1989	6	17	8	27	58
1990	6	16	7	39	68
1991	13	18	1	38	70
1992	9	17	13	48	87
1993	0	16	11	55	82
1994	2	27	14	44	87
1995	4	24	11	50	89
1996	7	45	15	53	120
1997	6	30	20	46	102
1998	9	16	6	39	70
1999	6	15	9	37	67
2000	5	3	0	26	34
2001	5	3	2	20	30
2002	12	3	1	22	38
2003	14	6	5	23	48
2004	18	6	1	14	39
2005	15	11	4	17	47
2006	20	12	5	10	47
2007	16	12	2	20	50
2008	15	5	1	17	38
2009	15	6	6	18	45
2010	10	9	2	14	35
2011	0	3	3	17	23
2012	3	9	1	9	22
2013	4	3	3	13	23
2014	6	5	1	13	25
2015	5	9	10	12	36
2016	3	16	7	26	52
2017	6	7	14	27	54
2018	8	6	3	24	41
2019	3	11	4	38	56
2020	7	9	1	10	27
2021	4	9	3	6	22

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