



Mid-Atlantic Fishery Management Council

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Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: May 26, 2022
To: Chris Moore, Executive Director
From: Jason Didden, Staff
Subject: Longfin Squid 2023 Specifications Review

As part of the multi-year specification process for longfin squid, the Scientific and Statistical Committee (SSC) and Council review the most recent information available to determine whether modification of the specifications is warranted. Neither staff, nor the SSC, nor the Monitoring Committee recommended any changes for the 2023 specifications for longfin squid, and no action is required by the Council. A Management Track Assessment is planned for 2023 to inform specifications for 2024 and beyond. A Research Track Assessment is planned for 2026 (<https://s3.us-east-1.amazonaws.com/nefmc.org/2022-2026-Stock-Assessment-Schedules.pdf>).

The following materials are included for Council consideration on this subject:

- 1) Monitoring Committee Summary – See Chub Mackerel Tab
- 2) Report of the May 2022 SSC Meeting – See Committee Reports Tab
- 3) Staff ABC Recommendation Memo (May 2, 2022)
- 4) Longfin Squid Advisory Panel Fishery Performance Report (April 2022)
- 5) Longfin Squid Fishery Information Document (April 2022)
- 6) NEFSC longfin catch and index figures



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MEMORANDUM

Date: May 2, 2022
To: Chris Moore, Executive Director
From: Jason Didden, Staff
Subject: Longfin Squid ABC – Staff Recommendation

Longfin Squid

As part of the specification process for longfin squid, the SSC and Council will review the most recent information available to determine whether modification of the 2023 specifications is warranted. The longfin squid fishery is currently under multi-year specifications for 2021-2023. The ABC (23,400 MT) is not proposed to change from 2021-2023 under the multi-year specifications, based on previous SSC recommendations. After a review of the available information, staff recommends no changes to the previously-recommended 2023 ABC.

We are hoping to get an update of recent NEFSC trawl survey results before the SSC meeting and will post that information if/when available.



Longfin Squid Fishery Performance Report

April 2022

The Mid-Atlantic Fishery Management Council's (Council) Mackerel-Squid-Butterfish (MSB) Advisory Panel (AP) met via webinar on April 26, 2022 to review the Fishery Information Document and develop the following Fishery Performance Report. The meeting also addressed chub mackerel, but a separate report was generated for chub mackerel. The primary purpose of the report is to contextualize catch histories for the Scientific and Statistical Committee (SSC) by providing information about fishing effort, market trends, environmental changes, and other factors. The trigger questions below were posed to the AP to generate discussion. The AP comments summarized below are not necessarily consensus or majority statements.

Advisory Panel members present (7 of 16): Sam Martin, Emerson Hasbrouck, Katie Almeida, Greg DiDomenico, Dan Farnham Jr, Gerry O'Neill, Jeff Kaelin.

Others present: Carly Bari (GARFO), Julia Beaty (MAFMC staff), Jason Didden (MAFMC staff), Michelle Duval (MAFMC member), Gavin Fay (SSC member), Damiana Hartley, Mark Holliday (SSC member), Peter Hughes (MAFMC MSB Committee Chair), Mary Beth Tooley.

Discussion Questions:

1. What factors have influenced recent catch (markets, environment, regulations, etc.)?
2. Are the current fishery regulations appropriate? How could they be improved?
3. What would you recommend as research priorities?
4. What else is important for the Council to know?

General

Shifting thermal habitat suitability is impacting the distribution and/or productivity of MSB species, and needs to be taken into account by assessments/management.

There is concern that assessments will be hurt if surveys are limited by wind development. Similar concern exists regarding data gaps due to COVID-19.

Tariffs affect prices and profitability, and therefore trade. If a buyer is in China, that buyer may try to negotiate price based on what they know they will have to absorb in tariffs.

Management and research track assessments are upcoming (Management Track in 2023 and Research Track in 2026). Management Track input: The Council needs to communicate early with the Center so that fishery participants know what to expect and/or how they can participate or provide data. Research Track input: Having a facilitator was important for *Illex*, and would be good for longfin also. Data issues need to be addressed early as well.

Market/Economic Conditions

COVID-19 had drastic impacts on 2020 longfin demand. Retail trade provided an outlet for some longfin squid products. COVID-19 will continue to increase market uncertainties for the foreseeable future. Ex-Vessel prices dropped 40%-50% from early 2020 to April 2020. 2021 prices for Towndock were nearly the same as pre-Covid prices.

Supply/distribution issues (and increasing shipping costs) are also affecting all seafood markets. EU regulations and market preferences (squid size sorting requirements) also limit ability to re-shuffle squid products into Europe.

Fuel conditions in 2022 are a factor currently affecting the decision whether it's worth going after longfin, or how far participants are willing to travel.

Environmental Conditions

See point above in general section about shifting thermal habitat.

The low catches/effort in summer 2020 presented a natural experiment about laying off squid in the summer – had hoped for a productivity bump in late 2020/early 2021 (was not a boom).

Management Issues

Area/gear limitations negatively affect fishing/landings. Scup, Tilefish, and Fixed/Mobile Gear Restricted Areas (GRAs) have made longfin squid fishing more difficult. Large mesh requirements on George's Bank also restrict targeting of longfin squid in an areas where fishermen have been seeing signs of longfin squid. Until mid-2020, the Northeast Canyons and Seamounts Marine Monument may have also negatively impacted access to areas where longfin squid could have been caught. Northeast Canyons and Seamounts Marine Monument restrictions have been back in place since October 8, 2021. It's still not clear what impacts have been created by the Monument for MSB – could warrant additional analysis (the Monument also acts as a fence because you'd have to spend the time and fuel to get to the other side).

Other Issues

Appears observers starting to be aware of use of large mesh belly panel – is not clear how this may be being used for discard extrapolation. It's also a new gear designation for VTRs and we may need some outreach that this is a new VTR gear code. Same for observers to ensure gear types are matched correctly.

Upcoming potential for Turtle TEDs needs to consider/research how the new large mesh belly panel gear may interact with Turtle TEDs – research presented to date has been with older gear – potential effectiveness may be different with the current gear. (Cornell has submitted some related proposals, is collaborating with NMFS and proposals are under review.)

Windfarm development continues to be a major concern for the longfin squid fishery given expanding potential overlap between potential wind farm areas and squid fishery areas. Concerns involve **both** fleet displacement and effects on squid mortality/behavior from installation and/or operation of turbines/facilities.

Research Priorities

Investigate NEFSC survey catchability for longfin.

It needs to be more clearly described how the existing evidence supports two primary cohorts (which happen to align with the surveys).



Longfin Squid Fishery Information Document

April 2022

This Fishery Information Document provides a brief overview of the biology, stock condition, management system, and fishery performance for longfin squid (“longfin” hereafter, formerly known as “Loligo”), 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

- 2021 landings, revenues, and average price for longfin squid were up in 2021 compared to 2020. Landings have generally been variable and well below the quota in recent years.
- 2022 landings are off to a moderate start – about double last year at this time but are still unlikely to achieve half of the 2022 Trimester 1 quota.
- Longfin had a management track assessment in 2020. Based on 2019 data the fishery was not overfished. Overfishing reference points are not available.
- Considerable variability is expected in abundance, availability, and landings for any squid fishery.

Basic Biology

Longfin squid is a neritic (from the shore to the edge of the continental shelf), semi-pelagic schooling cephalopod species primarily distributed between Georges Bank and Cape Hatteras, NC. The squid, and the fishery, generally occur offshore in the winter and inshore during the summer, with mixing and migrations from one to the other in spring and fall. Spawning/recruitment occurs year-round with seasonal peaks in cohorts. The average lifespan of a cohort is about six months. Individuals hatched inshore during the summer are taken in the winter offshore fishery and those hatched in the winter are taken in the inshore summer fishery. Age data indicate that NEFSC spring surveys (March-April) capture longfin squid that were hatched during the previous six months, in the fall, and those caught in the NEFSC fall surveys (September-October) were hatched during the previous spring. Longfin squid attach egg masses to the substrate and fixed objects. Fishing and spawning mortality occur concurrently inshore during late spring through fall. The locations of spawning sites offshore at other times of the year are not well understood. Additional life history information is detailed in the EFH document for the species, located at: <http://www.nefsc.noaa.gov/nefsc/habitat/efh/>.

Status of the Stock

Based on the last management track assessment, the status of longfin squid in 2019 was not overfished but there are no overfishing reference points available (available at https://apps-nefsc.fisheries.noaa.gov/saw/sasi/sasi_report_options.php). See Figure 1 for trends in biomass from the last assessment. We hope to get an update of Figure 1 before May 2022. The assessment also presented unaveraged trends based on the spring and fall surveys separately representing two dominant cohorts, and solicited input from the reviewers about switching to considering the two dominant cohorts separately. The reviewers supported moving forward with such an approach. Because the median fall biomass is about five times bigger than the median spring biomass, there could be considerable management implications if the surveys are ultimately used to manage two cohorts separately (e.g. consideration of either changes to trimester allotments or changes to the overall seasonal management approach might become warranted).

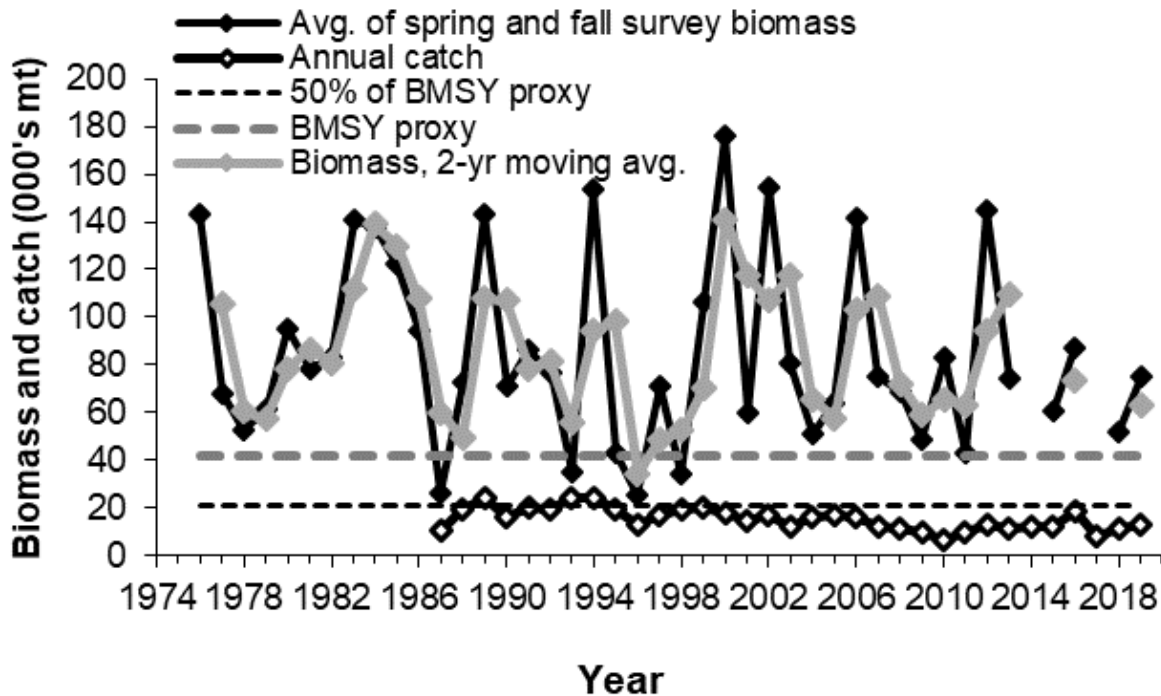


Figure 1. Annualized biomass estimates (annual averages of the NEFSC spring and fall survey biomass estimates in mt) of longfin in relation to the existing BMSY proxy (42,205 mt) and annual catches during 1987-2019 (when fishing was solely conducted by the USA fleet). The grey line represents the annualized biomass two-year moving averages which are used to determine stock status. Some years near the end are missing due to missing survey data.

Management System and Fishery Performance

Management

The Council established management of longfin in 1978 and the management unit includes all federal East Coast waters.

Access is limited with several moratorium permit categories. The quota is divided into three, 4-month Trimesters (T) - 43% (T1 Jan-Apr), 17% (T2 May-Aug), and 40% (T3 Sept-Dec). Unused quota can roll over into later trimesters within a year depending on the amount of longfin landed. Underages from T1 that are greater than 25% are reallocated to Trimesters 2 and 3 (split equally between both trimesters) of the same year. However, the T2 quota may only be increased by 50% via rollover and the remaining portion of the underage is reallocated to T3. Any underages for T1 that are less than 25% of the T1 quota are applied only to T3 of the same year. Any overages for T1 and T2 are subtracted from T3 of the same year as needed.

The 2022 longfin squid ABC is 23,400 MT, with a commercial quota of 22,932 MT. The 2023 quota is projected to be the same.

Recreational catch of longfin is believed to be negligible relative to commercial catch. There are no recreational regulations except for party/charter vessel permits and VTR reporting. MRIP does not collect information on invertebrates, but social media indicates a recreational fishery (private and for-hire) does occur.

Commercial Fishery

Figure 2 below from the last assessment describes longfin landings 1963-2019. We hope to get an update of Figure 2 before May 2022. Figures 3-4 describe domestic landings, ex-vessel revenues (2021 dollars), and prices (2021 dollars) since 1996. Figure 5 illustrates preliminary landings throughout the year for 2020 and 2021. Figure 6 illustrates preliminary landings for Trimester 1 for 2021 and 2022. The Gross Domestic Product Implicit Price Deflator was used to report revenues/prices as “2021 dollars.”

Table 1 describes 2021 longfin landings by state. Table 2 describes 2020 and 2021 longfin landings by NMFS Statistical Areas. Almost all landings that have gear identified are bottom trawl.

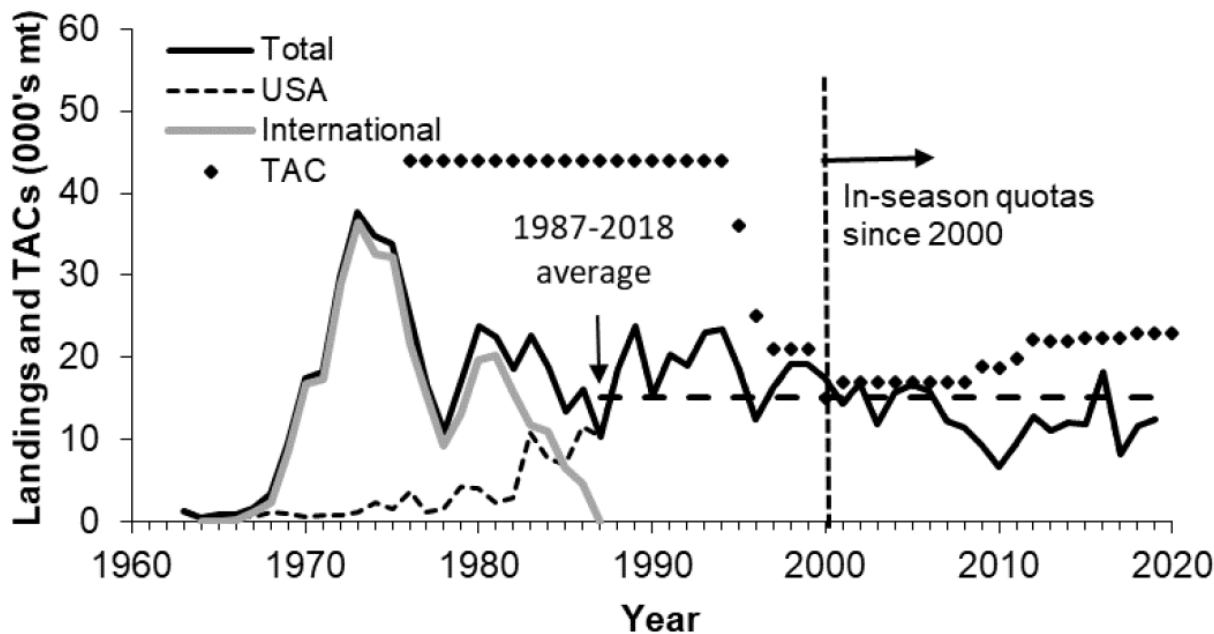


Figure 2. Landings (000s mt) of *Doryteuthis pealeii*, by USA and international fleets, on the Northeast USA continental shelf during 1963-2019 and annual TACs during 1974-2020. In-season quotas were quarterly-based during 2001-2006 and trimester-based during 2000 and 2007-current.

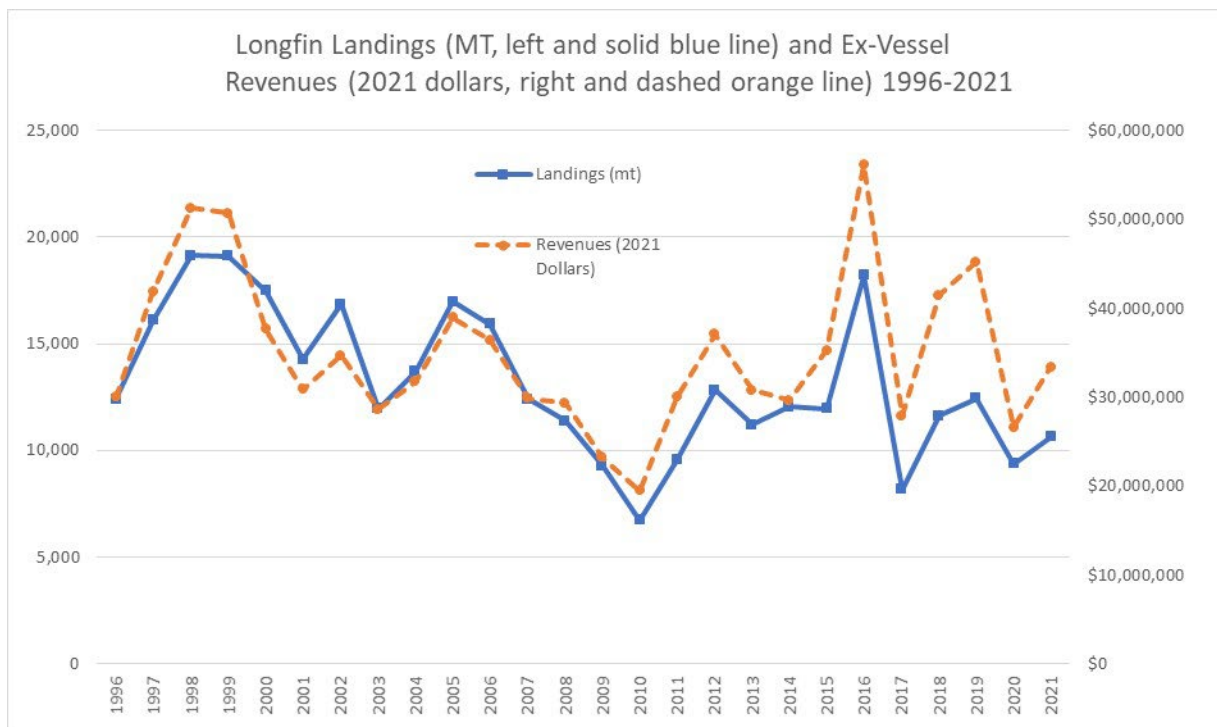


Figure 3. U.S. Longfin Landings and Longfin Ex-Vessel Values 1996-2021. Source: NMFS unpublished dealer data.

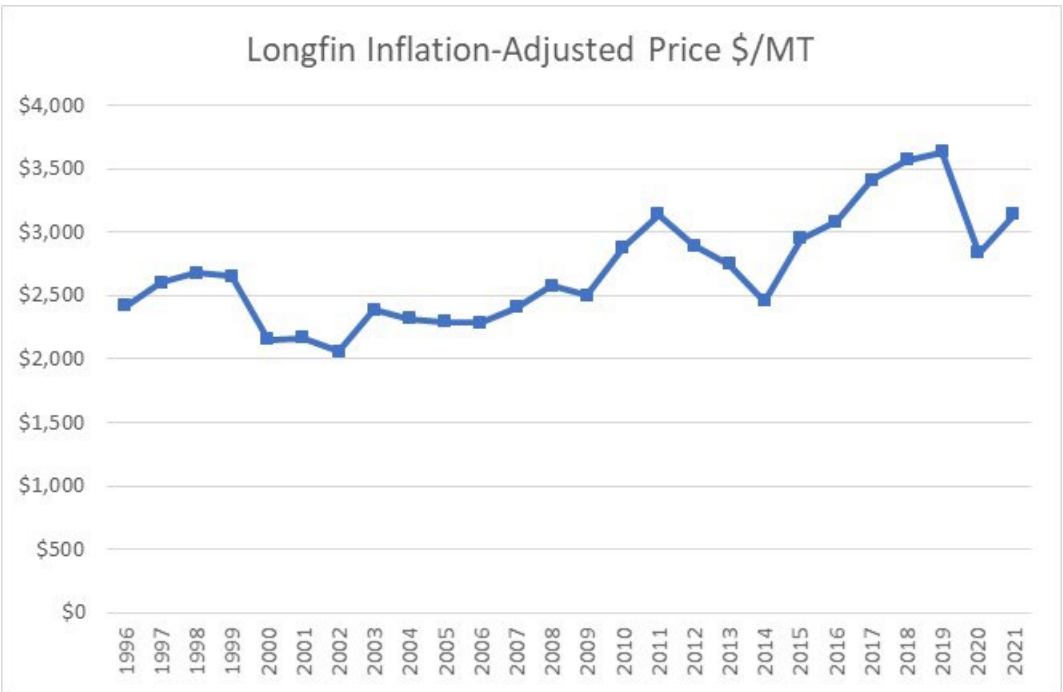


Figure 4. Ex-Vessel Longfin Prices 1996-2021 Adjusted to 2021 Dollars Source: NMFS unpublished dealer data.

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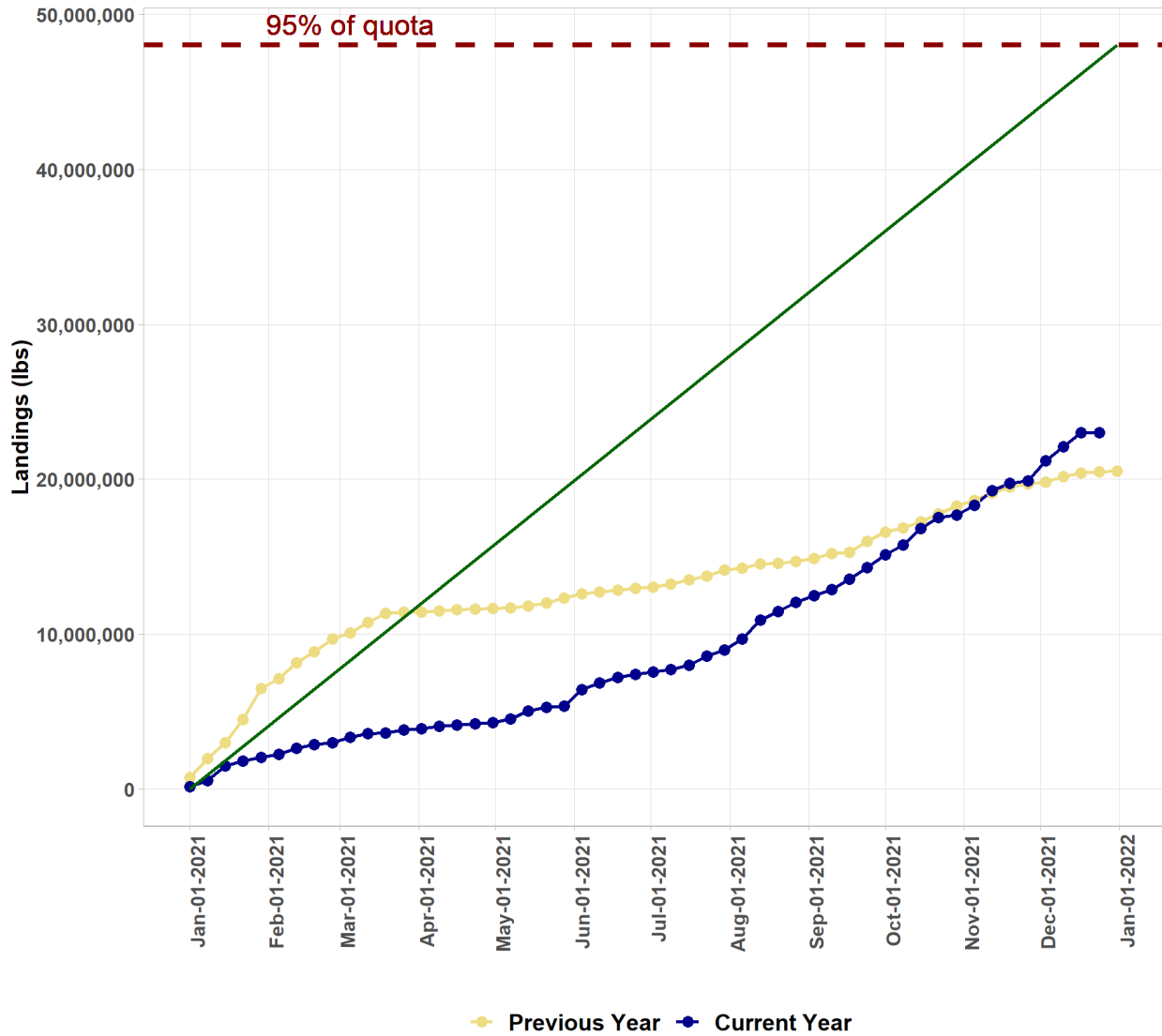


Figure 5. U.S. Preliminary Longfin landings; 2021 in blue, 2020 in yellow-orange. Source: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region>.

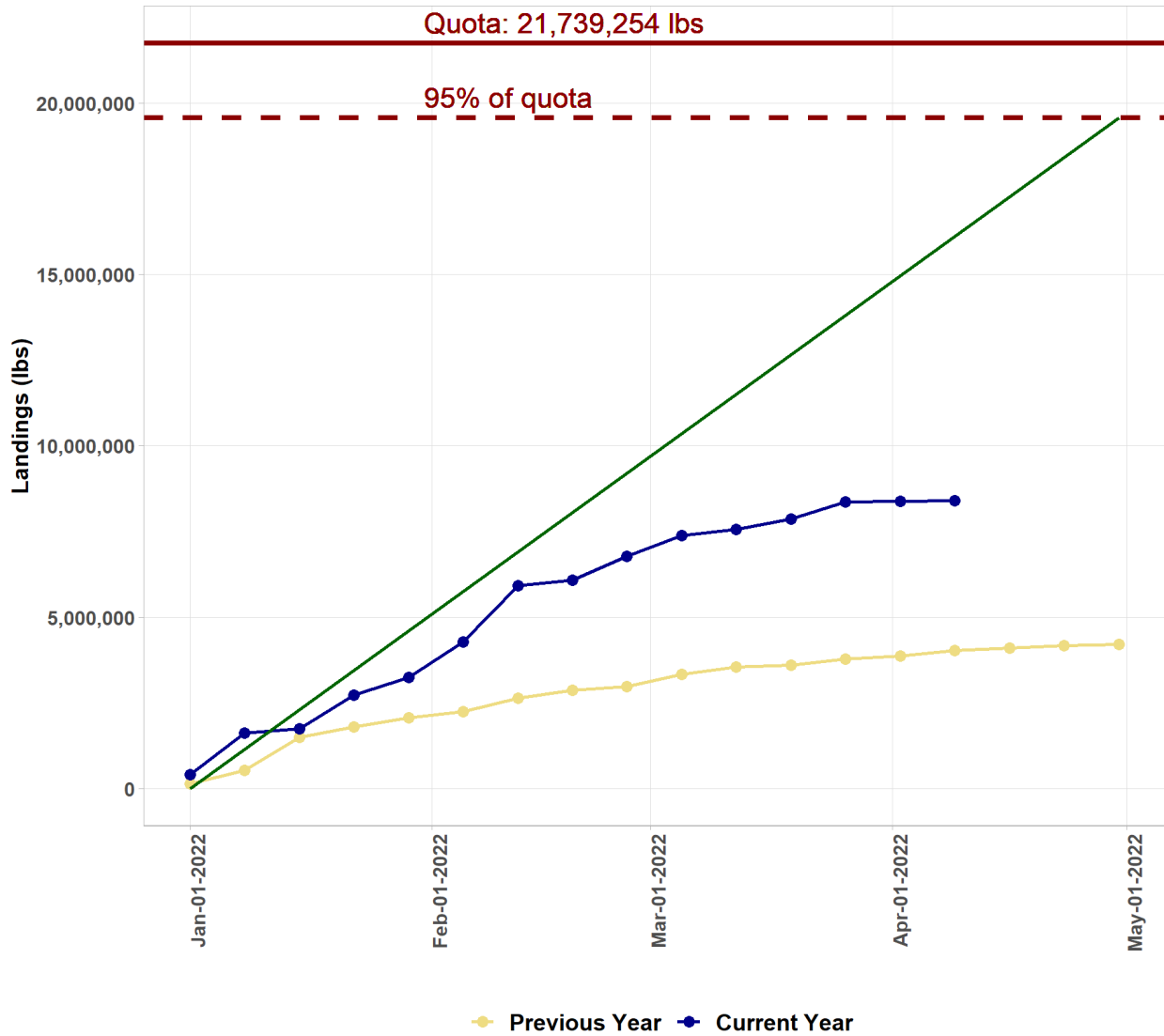


Figure 6. U.S. Preliminary Longfin landings; 2022 Trimester 1 in blue (through 4/14/22), 2021 Trimester 1 in yellow-orange. Source: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region>.

Table 1. Commercial Longfin landings (live wt) by state in 2021. Source: NMFS unpublished dealer data.

State	Metric Tons
RI	6,682
NY	2,111
MA	772
NJ	661
CT	356
Other	68
Total	10,650

Table 2. Commercial longfin landings by statistical area in 2020 and 2021. Source: NMFS unpublished VTR data.

2020		2021	
Stat Area	Metric_Tons	Stat Area	Metric_Tons
622	1,784	537	2,030
616	1,770	613	1,983
613	1,038	616	1,660
626	777	622	1,157
525	748	626	462
537	534	526	316
612	396	539	309
526	323	538	288
611	227	611	260
562	216	525	191
538	206	627	131
539	197	562	123
623	191	632	114
632	76	167	100
615	57	615	69
627	53	612	65
Other	219	166	62
Total	8,812	623	51
		Other	165
		Total	9,535

Note: Expected to be lower than dealer database due to state landings.

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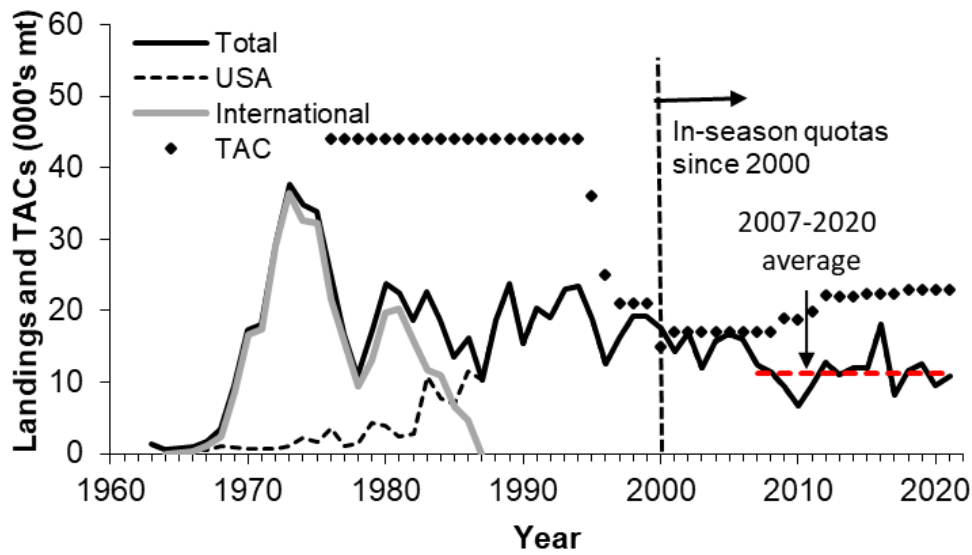


Figure 1. *Doryteuthis pealeii* landings during 1976-2021. The 2021 landings are preliminary because not all of the state data were available as of May 3, 2022. Trimester-based quotas have been in effect since 2007.

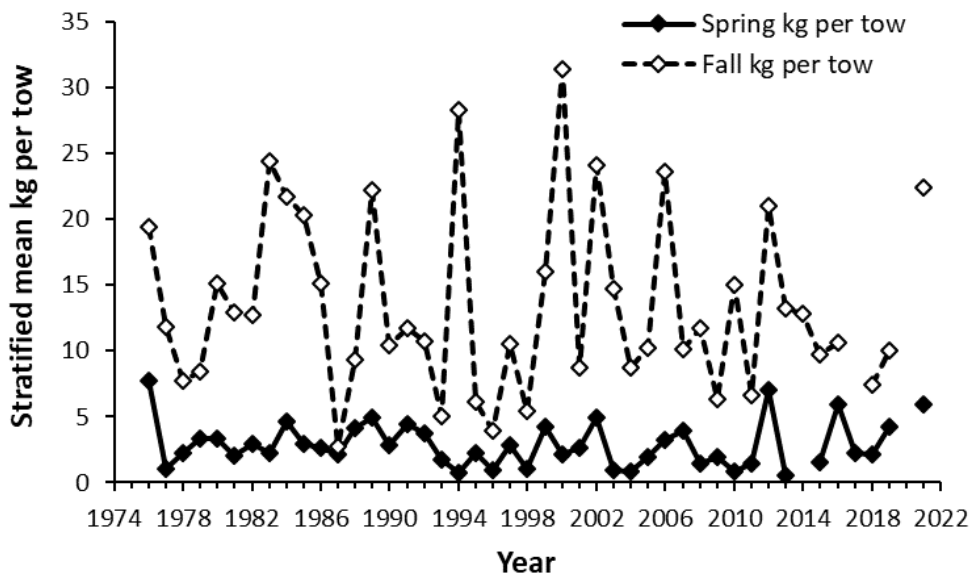


Figure 2. NEFSC spring and fall survey relative biomass indices (stratified mean kg per tow), for *Doryteuthis pealeii*, during 1976-2021. Indices were not computed for the fall of 2017 and 2020 (due to incomplete sampling of the species' habitat and the lack of a survey due to the COVID-19 pandemic, respectively) or the spring of 2014 and 2020 (due to incomplete sampling of the species' habitat).