



Mid-Atlantic Fishery Management Council

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M E M O R A N D U M

Date: May 24, 2021
To: Council
From: Jason Didden, Staff
Subject: Longfin Squid and Butterfish 2022 Specifications Review

As part of the multi-year specification process for longfin squid and butterfish, the Scientific and Statistical Committee (SSC) and Council review the most recent information available to determine whether modification of the specifications is warranted.

The following is included for Council consideration on this subject:

- 1) Monitoring Committee Summary (May 19, 2021)
- 2) Report of the May 2021 SSC Meeting – See Committee Reports Tab
- 3) Staff Recommendations Memo (May 3, 2021)
- 4) Squid and Butterfish Advisory Panel Fishery Performance Report (April 2021)
- 5) Longfin Squid Fishery Information Document (April 2021)
- 6) Butterfish Fishery Information Document (April 2021)
- 7) Correspondence

Neither staff nor the SSC nor the Monitoring Committee recommended any changes to the 2022 specifications for longfin squid or butterfish, and no action is required by the Council. A potential change to the butterfish mesh size is discussed in the Monitoring Committee Summary, but no change was recommended.



MSB Monitoring Committee Meeting Summary

May 19, 2021

Webinar

The Mid-Atlantic Fishery Management Council's (Council) Mackerel, Squid, and Butterfish (MSB) Monitoring Committee met on May 19, 2021 at 1pm. The purpose of this meeting was to develop recommendations related to squid and butterfish specifications (mackerels will be addressed later in the year).

MSB Monitoring Committee Attendees: Jason Didden, Chuck Adams, Doug Christel, Lisa Hendrickson, and Daniel Hocking.

Other Attendees: Jeff Kaelin, Alissa Wilson, Aly Pitts, Greg DiDomenico, Peter Hughes, Zach Greenberg, and Willow Patten.

Illex Squid

After considering the Scientific and Statistical Committee's (SSC) *Illex* Acceptable Biological Catch (ABC) recommendation of 33,000 metric tons (MT) for 2021-2022 (+10% from the current 30,000 MT ABC), the Monitoring Committee recommended using updated discard information developed for the Research Track Assessment (SBRM approach) to establish the 2022 *Illex* squid specifications. Based on follow-up emails among the Monitoring Committee members, the recommended approach was to use the average discard percentage of total catch estimates from 2017-2019: **4.61%**. The 2017, 2018, and 2019 annual discard percentages (and their CVs) were 3.66% (0.24), 5.51% (0.21), and 4.67% (0.27), respectively. In addition to the high precision of the 2017-2019 discard estimates, two of the highest numbers of observed small mesh (0.5-2.49 in. codend mesh size) bottom trawl trips occurred during these years. The amount that would be set aside for discards (1,521.3 MT) is likely to avoid a substantial ABC overage given recent and historical estimated discards. The current set-aside (4.52%) was calculated as the mean plus one standard deviation of the final 10 years (1995-2004) of data from the previous assessment (SBRM had not been developed at that time).

The recommended *Illex* specifications for 2022 would thus be ABC = 33,000 MT and IOY¹ = DAH² = DAP³ = 31,478.7 mt. The Council could also request that NMFS use existing in-season adjustment procedures to similarly adjust/increase the 2021 specifications. Staff noted that a proposed rule is expected soon that would lower the directed fishery closure threshold from 95% to 94%, and require faster *Illex* dealer reporting (there was no quota overage

¹ IOY = Initial optimum yield

² DAH = Domestic Annual Harvest

³ DAP = Domestic Annual Processing

in 2020 but there were overages in 2018 and 2019). The timing is tight for in-season adjustments, but a similar adjustment was successfully accomplished in 2020.

Per the Council’s tasks related to the 2020 Executive Order on Seafood Competitiveness, the Monitoring Committee also discussed the appropriateness of the current 10,000-pound *Illex* trip limit implemented once the directed *Illex* fishery closes. While there are some regulatory *Illex* discards reported in the observer database on longfin trips (i.e., 40% longfin of weight kept), instances of *Illex* catch above 10,000 pounds after closures in 2017-2019 on these trips were relatively infrequent (11% of 119 longfin trips with some *Illex* catch). Additionally, 75% of the observed discards occurred due to market concerns (i.e. not regulations). Staff can continue to monitor observer data for substantial regulatory discarding, but at this time the Monitoring Committee recommends no changes to this management measure, especially with an *Illex* Research Track Assessment ongoing.

Butterfish

The SSC did not change its previous butterfish ABC recommendation for 2022 (see table below) and the Monitoring Committee found no need to recommend any other changes to the butterfish specifications previously set by the Council for 2022:

	Specification	2021	2022	Rationale Summary
	OFL	22,053	24,341	From projections
a	ABC	11,993	17,854	From SSC, scientific uncertainty
b	ACT Buffer %	5%	5%	for management uncertainty
c	ACT Buffer	600	893	a times b
d	ACT (a-c)	11,393	16,961	a-c
e	Assumed discards in directed fishing (7.6%)	522	945	from observer data
f	Assumed other discards	637	637	from cap performance
g	Non-longfin discards	1,159	1,582	e+f
h	Butterfish Cap (longfin discards)	3,884	3,884	set by Council
i	Total discard set-aside	5,043	5,466	g+h
j	Landings or "Domestic Annual Harvest" (DAH)	6,350	11,495	d-i
k	Close primary directed at this amount, i.e. with 1,000 mt left; go to 5,000 pound trip limit	5,350	10,495	j-1000

Per the Council’s tasks related to the 2020 Executive Order on Seafood Competitiveness, the Monitoring Committee also discussed the appropriateness of the current 3-inch mesh requirement for retaining more than 5,000 pounds of butterfish (designed to reduce catch of small butterfish during directed fishing). While there are some regulatory butterfish discards reported in the observer data on longfin trips (40% longfin of weight kept) that are likely using smaller mesh, instances of butterfish catch above 5,000 pounds in 2017-2019 on these trips were relatively infrequent (4% of 969 longfin trips with some butterfish catch). Additionally, 92% of observed discards occurred due to market concerns (i.e. not regulations). Staff can continue to monitor observer data for substantial regulatory discarding, but at this time the Monitoring Committee recommends no changes to this management measure, especially with a butterfish Research Track Assessment ongoing.

Longfin Squid

The SSC did not change its previous longfin squid ABC recommendation for 2022 (see table below) and the Monitoring Committee found no need to recommend any other changes to the longfin specifications previously set by the Council for 2021-2023:

Specification	Longfin 2021-2023 (MT)	Rationale
(a) Overfishing Limit (OFL)	Not available	unknown
(b) Acceptable Biological Catch (ABC)	23,400	from SSC
(c) Commercial Discard Set-Aside	2.00%	from recent observations
(d) Initial Optimum Yield (IOY)/DAH/DAP	22,932	ABC - discard set-aside

(The DAH is divided into three 4-month trimesters: 43% Jan-Apr, 17% May-Aug, 40% Sept-Dec with rollover procedures accounting for trimester underages and overages).



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

MEMORANDUM

Date: May 3, 2021
To: Chris Moore, Executive Director
From: Jason Didden, Staff
Subject: Butterfish, Longfin, and *Illex* ABCs¹ – Staff Recommendations

Butterfish

As part of the specification process for butterfish, the Scientific and Statistical Committee (SSC) and Council will review the most recent information available to determine whether modification of the 2022 specifications is warranted. The butterfish fishery is currently under multi-year specifications for 2021-2022. The Acceptable Biological Catch (ABC) is projected to increase from 11,993 metric tons (MT) in 2021 to 17,854 MT in 2022, based on previous SSC recommendations. After a review of the available information, staff recommends no changes to the previously-recommended 2022 ABC. A research track assessment is currently underway.

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 2022 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 2022 ABC.

¹ An Atlantic mackerel management track assessment is underway, and should be available for SSC review and ABC-setting at the July 2021 SSC meeting.

Illex Squid

As part of the specification process for *Illex* squid, the SSC and Council will review the most recent information available to determine whether modification of the 2021 specifications is warranted, and to set 2022 specifications. The *Illex* squid fishery is currently under single-year specifications for 2021. The current ABC is 30,000 MT, set in 2020 after review of various analyses conducted by the Council's *Illex* quota working group. Several of those analyses are informing the current *Illex* research track assessment (RTA). The Council's *Illex* working group identified environmental drivers as a likely useful medium-term avenue of inquiry to inform quotas, and is tracking related work being conducted via the RTA. Two working papers extending analyses considered in 2020 are included for SSC review.

2020 *Illex* landings totaled 28,135 MT, a record high for this fishery in U.S. waters. The fishery closed August 31, 2020, at a time of high weekly landings (in a very similar fashion as 2019).

To prepare for the SSC meeting, Council staff also considered the previous working group products, recent landings, the Council's recently-updated risk policy, and the ABC control rule, which tends toward more caution with higher uncertainty. Given these considerations, staff requested that Dr. Paul Rago review and update relevant previous analyses and consider the outcomes those analyses might suggest regarding a 10% increase in ABC to 33,000 MT. A 10% increase was identified by Council staff as an incremental approach while the RTA is ongoing, which acknowledges both the recent strength of the fishery and the Council's risk policy and ABC control rule.

Based on Dr Rago's analyses, which are supported by additional analyses from a group led by Dr. John Manderson, staff concludes that a 10% ABC increase to 33,000 MT is consistent with the Council's risk policy and would be unlikely to cause overfishing. This ABC would be for 2021 and 2022. The Environmental Assessment for the current specifications considers an ABC range of up to 40,000 MT, so if updated recommendations result from the May 2021 SSC meeting, NMFS may be able to implement changes for the 2021 fishery. Staff anticipates another review process would occur in 2022 depending on the results of the 2021 RTA.



Squid and Butterfish Fishery Performance Reports April 2021

The Mid-Atlantic Fishery Management Council's (Council) Mackerel-Squid-Butterfish (MSB) Advisory Panel (AP) met via webinar on April 20, 2021 to review the Fishery Information Documents and develop the following Fishery Performance Reports (mackerel will be dealt with later in the year). The primary purpose of these reports 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: Katie Almeida, Gerry O'Neil, Meghan Lapp, Greg DiDomenico, and Pam Lyons Gromen, Peter Kaizer, and Peter Moore.

Others present: Jason Didden, Paul Rago, Aly Pitts, Peter Hughes, Eric Reid, Mary Sabo, Chuck Adams, and Stephen Pearson.

Trigger 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?

For organizational purposes, the summary is broken down by species. Each species discussion began by reviewing the species' "information document." Some general points were carried over from previous reports, as described immediately below.

1.1 General

Concern was voiced that 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.

Concern was voiced about the potential effects of 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.

1.2 Butterfish

Market/Economic Conditions

2020 butterfish demand was mostly status quo outside of Covid – i.e. slow development. U.S. butterfish competes with other butterfish that are larger, and which are sometimes imported into the U.S. as well, limiting market expansion. There's still limited interest in this fishery by the typical MSB fishery participant, but it's a substantial fishery for some.

Traditional markets disappeared (export to Japan – breakfast) and it's a long-term process to re-establish markets. Domestic fresh markets are limited, though suppliers are working on ways to expand the market.

Environmental Conditions

See point above in general section about shifting thermal habitat.

Management Issues

The Northeast Canyons and Seamounts Marine Monument negatively impacted access to butterfish until mid-2020, especially large butterfish that command the best prices.

Lobster RGAs are a gear-conflict issue for butterfish (and other MSB species).

The AP reviewed preliminary bycatch data in the longfin fishery – in general AP members thought it was worth continuing to explore bycatch issues to minimize any apparent regulatory issues, but there was not strong interest in making quick changes while the research track assessment is ongoing. A standing request for regulation outreach to the fishery was reiterated – GARFO is working on related outreach materials.

Other Issues

Dogfish abundance has been an issue for the directed fishery – at times vessels can't set on butterfish w/o overloading nets with dogfish.

Research Priorities

Integrating state surveys is important for this species in terms of observing recruitment (the current assessment is examining this).

We need to develop more understanding of biomass trends when fishing mortality does not appear to be a driving factor.

There was support voiced for the SSC providing catch advice that continues to incorporate forage concerns (see the 1992 Patterson paper, the butterfish assessment, and previous SSC approaches). It has been noted that the Fmsy proxy used in the assessment explicitly accounts for the forage role of butterfish.

We need a way to look at forage species holistically in terms of species compositions and abundances of other forage species at the same time. The butterfish biomass decline is concerning especially in context of other forage species (e.g. Atlantic herring and mackerel that are also declining).

1.3 Longfin Squid

Market/Economic Conditions

COVID-19 had drastic impacts on 2020 longfin demand. Retail trade has 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.

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.

Environmental Conditions

See point above in general section about shifting thermal habitat.

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.

Other Issues

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.

There was a question about 2020 squid effort/CPUE, but that information is not available.

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).

A squid jigging project through CFRF is underway to explore the feasibility of jigging.

1.4 *Illex* Squid

Introduction:

In general, discussion was muted given the expectation that the ongoing research track assessment will provide better information on *Illex*. Similar issues as last year persist.

Market/Economic Conditions

Demand drives the *Illex* fishery and participation. Price/demand are mostly dependent on the international market, which drives world trade prices and/or demand for U.S. *Illex*. Annual variability and price combine to drive interest in fishing for *Illex*. A strong dollar may also impact demand and effort. Market demand for *Illex* was robust in 2016-2020 with new markets (bait and food). MSC certification helps. World production of Japanese flying squid, Argentine shortfin squid, our *Illex*, and Jumbo flying squid creates supply, affects demand for our *Illex*.

Environmental Conditions

Availability changes quickly even in a year (waves of squid “come up onto the bank”). Quota levels have not hurt the stock and are unnecessarily restricting catches in some years; we need to think out of the box regarding quotas. Understanding migration is key and we don't understand the migration behavior and only access a small portion of the population. Real-time assessment would be optimal to avoid leaving excess *Illex* (and revenues) in the water without a conservation purpose during natural peaks. We need to research ways to take advantage of boom years, including considering the size of squid (taking large squid means harvesting fewer animals). Current management is not sensitive to actual *Illex* productivity or the impact of the fishery. The fishing community should be an integral part of any effort; make changes carefully but don't just get stuck where we are.

It was noted that given *Illex* are growing through the season, early shutdowns mean our picture of *Illex* size is incomplete.

There is interest in learning more about spawning habitat and timing. NEFSC staff had

planned for more collection in 2020 but did not get observers due to COVID. Planned for 2021 depending on observer deployments.

Management Issues

In the future, deep-sea coral closures may impact the ability of vessels to operate depending on where squid are in a given year – this may become an issue especially in slower years that last longer – *Illex* patterns are changing like other fish – they seem to be deeper in recent years.

Reduced herring quotas may increase participation in the *Illex* fishery.

A higher incidental longfin limit for *Illex* vessels during longfin closures or a more gradual slowing of longfin fishing could avoid regulatory longfin discarding. The new (since 2014) higher limit (15,000 pounds for Tier 1 longfin permit, 5,000 pounds for Tier 2 when on an offshore *Illex* trip and having more than 10,000 pounds of *Illex*) may not totally solve this problem. There is also interest in seeing commercial size data included annually for review by the AP.

Advisors noted ongoing Lobster/RGA issues and were interested in a better way to transition gears/area. (the Council tried to engage the ASMFC a number of years ago but there was not much interest). Fixed/mobile gear “gentlemen agreements” are used inshore and may be a solution, but might not be practicable for *Illex* given the patchiness of fish and the amount of gear out in the depth where *Illex* is fished. GARFO did have incidents of lobster gear interactions in 2020.

Jonah crab fixed gear is also an issue – boats are seeing more of this gear and it’s becoming a problem.

Regarding *Illex* trip limits after closure of the directed *Illex* fishery, there was a general sense that changing/increasing might be OK, but would need to be tied to possession of longfin to avoid post-closure directing on *Illex*. There were different perspectives on timing (whether or not to wait until after the *Illex* amendment has been implemented before considering other changes).

Other Issues

For refrigerated sea water vessels to participate, they need high densities to drive participation because they have to return to the dock within two days of starting to put *Illex* onboard due to spoilage issues. The fleet is changing from freezers to RSW, increasing catch rates. 3 boats in last 18 months have been converted from freezers to RSW. Some new mackerel/herring boats (besides the ones that have typically participated in *Illex*) have entered in recent years with more efficient pumping technology, increasing landing rates.

Passing of vessels is getting more difficult with the amount of vessels in the fishing areas given the length of tow line (500 fathoms of wire) out in deep water.

Research Priorities

Spawning information and real-time management with cooperative research.



Longfin Squid Fishery Information Document

April 2021

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 2020. 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

- 2020 landings, revenues, and average price for longfin squid were down in 2020 compared to 2019. Landings have generally been variable and well below the quota in recent years. 2021 landings are off to a slow start.
- 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. 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 moving to considering the two dominant cohorts separately. The reviewers supported moving forward with such an approach - Since 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).

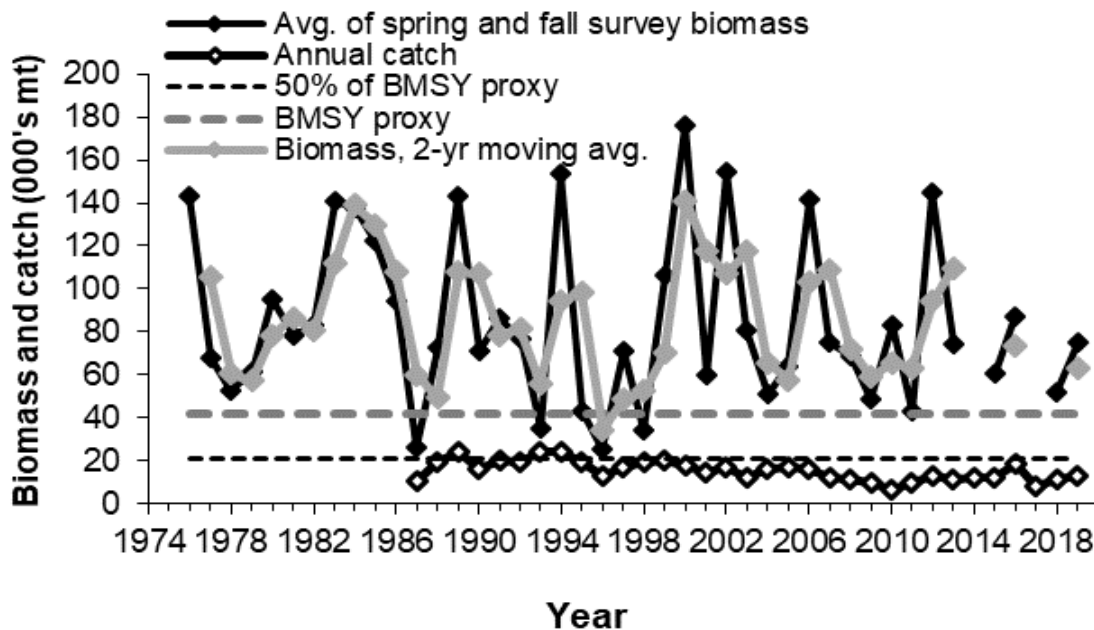


Figure 1. Annualized biomass estimates (annual averages of the NEFSC spring and fall survey biomass estimates in mt) of longfin in relation to the existing BMSY proxy (42,205 mt) and annual catches during 1987-2019 (when fishing was solely conducted by the USA fleet). The grey line represents the annualized 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 2021 longfin squid ABC is 23,400 MT, with a commercial quota of 22,932 MT. The 2022 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 reporting.

Commercial Fishery

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

Table 1 describes 2020 longfin landings by state, and Table 2 describes 2020 longfin landings by gear type. Table 3 describes 2020 longfin landings by NMFS Statistical Areas.

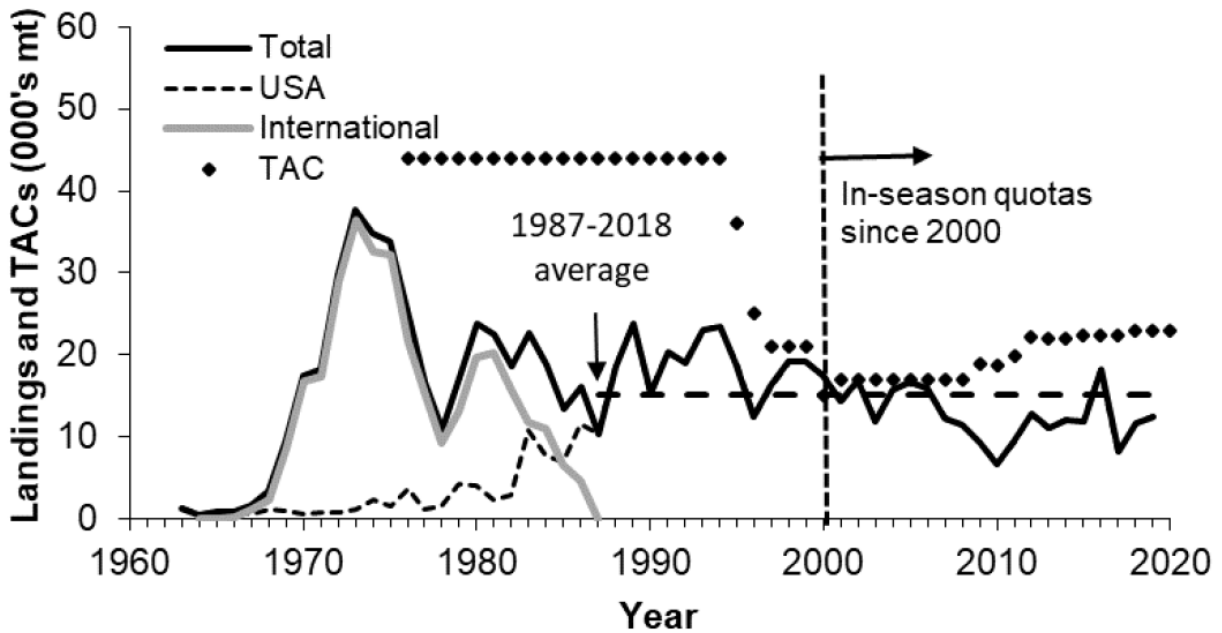


Figure 2. Landings (000s mt) of *Doryteuthis pealeii*, by USA and international fleets, on the Northeast USA continental shelf during 1963-2019 and annual TACs during 1974-2020. In-season quotas were quarterly-based during 2001-2006 and trimester-based during 2000 and 2007-current.

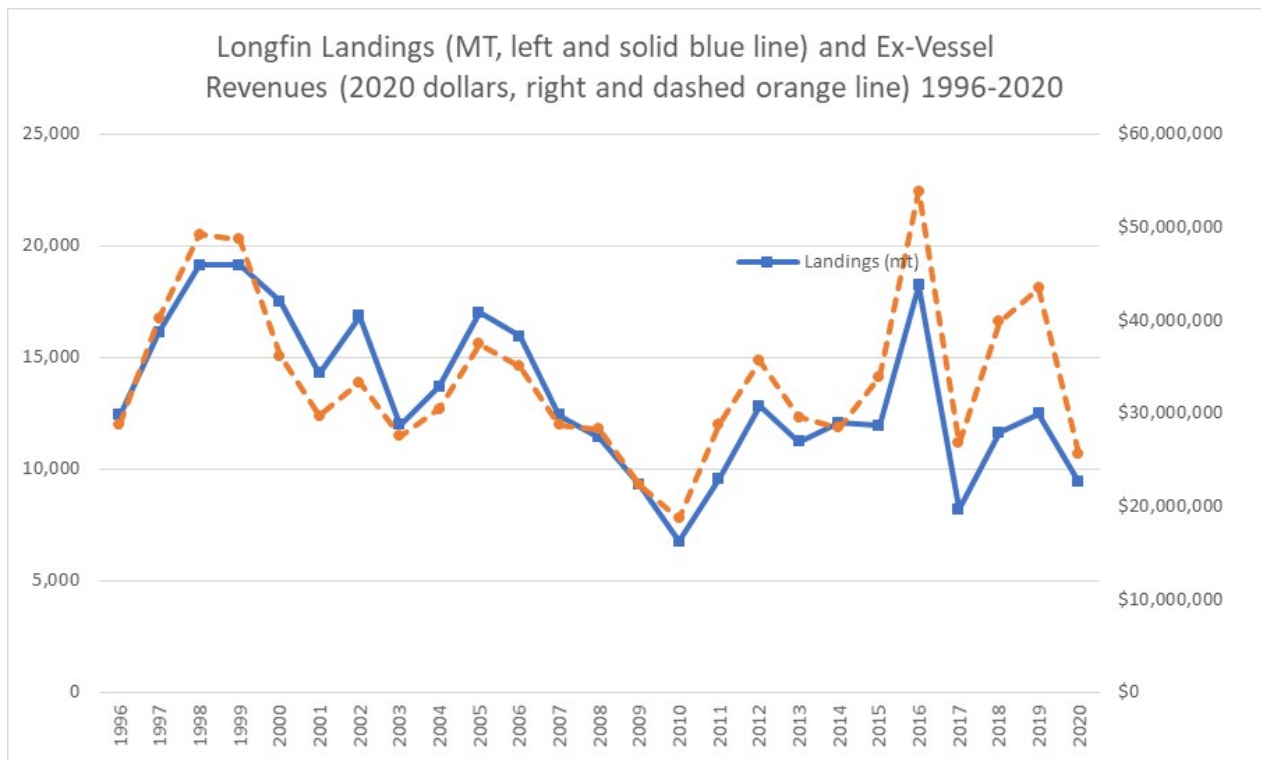


Figure 3. U.S. Longfin Landings and Longfin Ex-Vessel Values 1996-2020. Source: NMFS unpublished dealer data.

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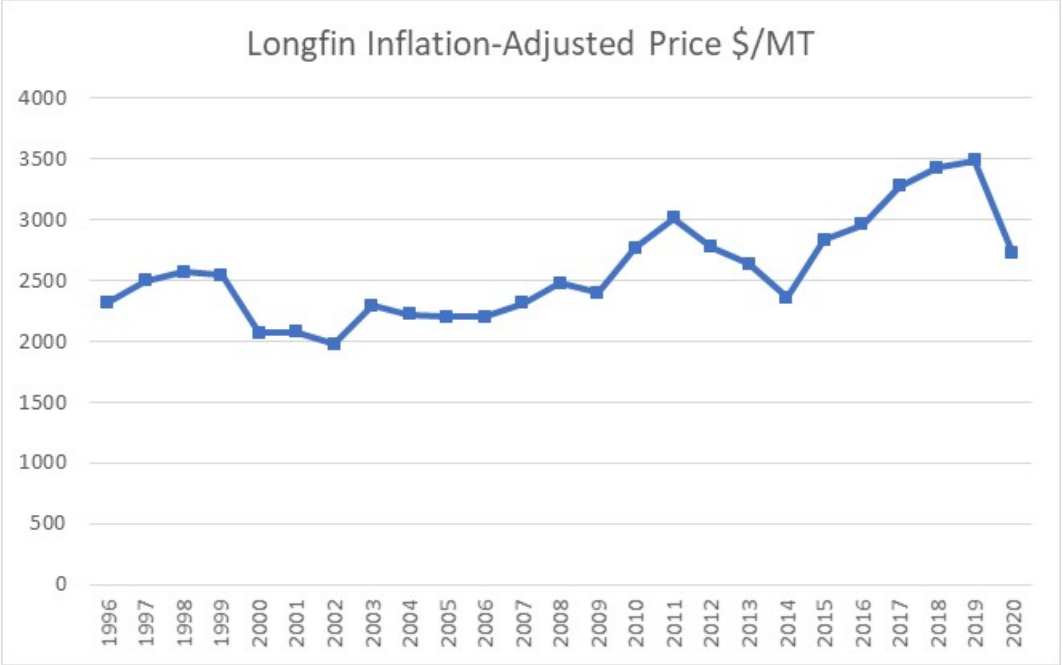


Figure 4. Ex-Vessel Longfin Prices 1996-2020 Adjusted to 2020 Dollars Source: NMFS unpublished dealer data.

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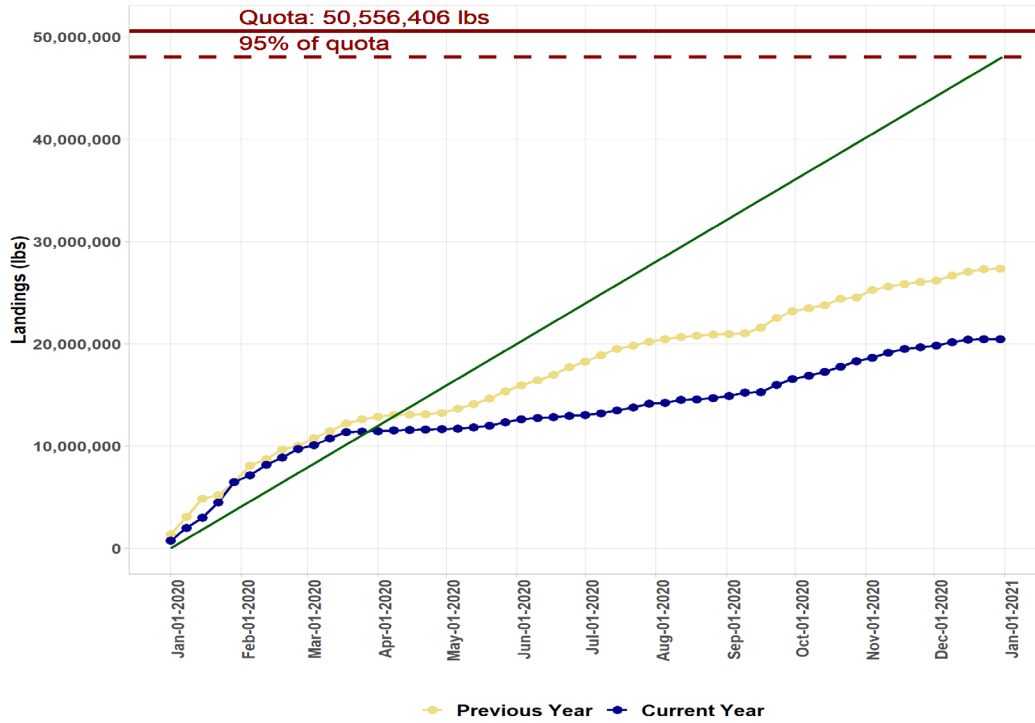


Figure 5. U.S. Preliminary Longfin landings; 2020 in blue, 2019 in yellow-orange. Source: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region>.

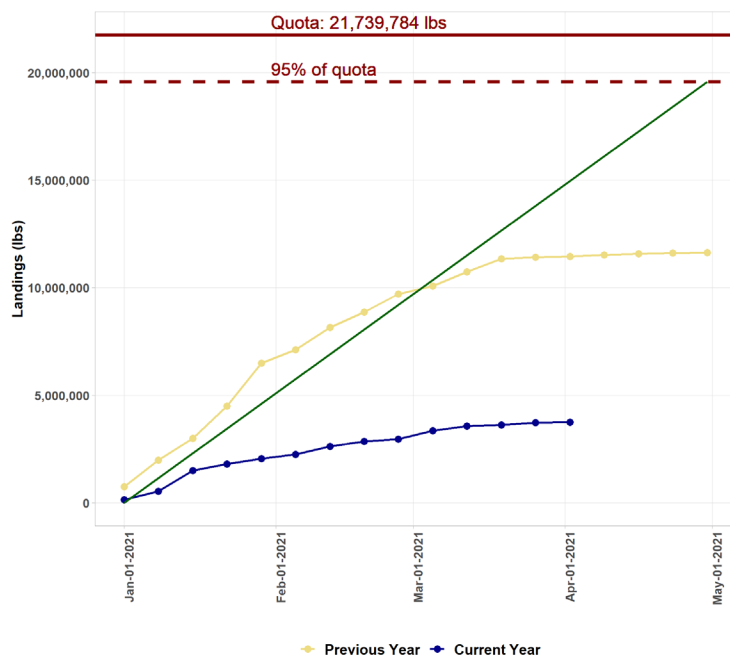


Figure 6. U.S. Preliminary Longfin landings; 2021 Trimester 1 in blue, 2020 Trimester 1 in yellow-orange. Source: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region>.

Table 1. Commercial Longfin landings (live wt) by state in 2020. Source: NMFS unpublished dealer data.

State	Metric_Tons
RI	5,266
NJ	1,690
NY	1,260
MA	545
CT	420
NA/Other	211
Total	9,392

Table 2. Commercial Longfin landings (live wt) by gear in 2020. Source: NMFS unpublished dealer data.

GEAR	Metric_Tons
TRAWL,OTTER,BOTTOM,FISH	8,025
UNKNOWN	1,020
Other	347
Total	9,392

Table 3. Commercial longfin landings by statistical area in 2020. Source: NMFS unpublished VTR data.

Stat Area	Metric_Tons
622	1,784
616	1,770
613	1,038
626	777
525	748
537	534
612	396
526	323
611	227
562	216
538	206
539	197
623	191
632	76
615	57
627	53
Other	219
Total	8,812

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Butterfish Fishery Information Document

April 2021

This Fishery Information Document provides a brief overview of the biology, stock condition, management system, and fishery performance for butterfish, with an emphasis on 2020. 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

- 2020 landings, revenues, and average price for butterfish were down in 2020 compared to 2019. Landings have generally been variable and well below the quota in recent years.
- Butterfish's last management track assessment update (2019 data) concluded biomass has been trending down but the stock is not overfished nor experiencing overfishing. Recruitment is variable but has been trending lower since 1999. Spawning stock biomass (SSB) in 2019 was estimated to be 69% of the target. A research track assessment is ongoing – if approved via peer review, any new assessment methods would be incorporated into a management track assessment update in 2022 for 2023-2024 quotas.
- Considerable variability is expected in abundance, availability, and landings.

Basic Biology

Atlantic butterfish is a semi-pelagic/semi-demersal schooling fish species primarily distributed between Nova Scotia, Canada and Florida. They are most abundant from the Gulf of Maine to Cape Hatteras and are fast-growing, short-lived, and form loose schools. They winter near the edge of the continental shelf in the Middle Atlantic Bight and migrate inshore in the spring into Mid-Atlantic, southern New England, and Gulf of Maine waters. During the summer, butterfish occur over the entire mid-Atlantic shelf from sheltered bays and estuaries out to about 200 m. In late fall, butterfish move southward and offshore in response to falling water temperatures.

Butterfish are relatively short-lived and grow rapidly; few individuals live beyond 3 years and most are sexually mature at 1-2 years of age. The maximum age reported is 6 years. Juvenile butterfish range from 16 mm to about 120 mm. During their first year, they grow to 76-127 mm, or about half their adult size. Early-spawned individuals are 76-102 mm in the fall; late-spawned individuals are 51-76 mm in the fall and 76-127 mm the following spring. Adult butterfish range from about 120 mm to 305mm with an average length of 150-230 mm. See <https://www.nefsc.noaa.gov/nefsc/habitat/efh/> for more life history information.

Status of the Stock

Based on the last management track assessment, in 2019 the status of butterfish was not overfished with no overfishing occurring (available at https://apps-nefsc.fisheries.noaa.gov/saw/sasi/sasi_report_options.php). However, declining recruitment has led to declines in biomass (Figure 1), and as of 2019 biomass is estimated to have been only 69% of the target. Projections run based on typical long-term recruitment predict a rapid increase in biomass, but that will only occur when the trend in recruitment reverses. Recent projections for catch limits used lower, more recent (last 10 years) recruitment, which reduces future projected biomass and catch recommendations.

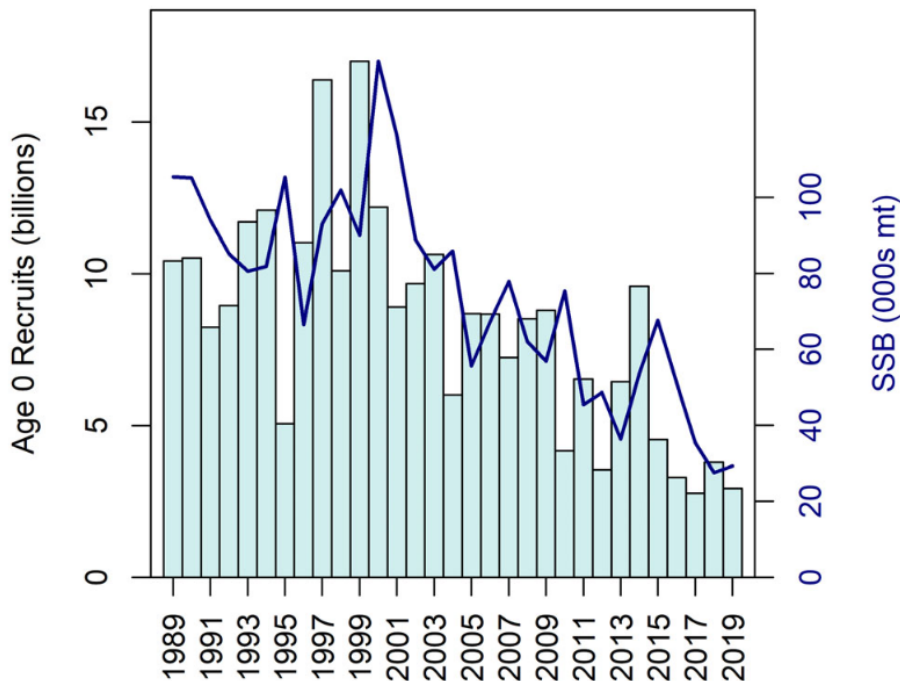


Figure 1. Butterfish recruitment (vertical bars), and the spawning stock biomass (blue line) 1989-2019.

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. Incidental permits are limited to 600 pounds per trip. The ABC for 2021 is 11,993 MT, with a commercial quota of 6,350 MT. At 5,350 MT a 5,000-pound trip limit

is implemented to slow the fishery and avoid having to go to the 600-pound trip limit that is implemented once the full quota is reached (in order to minimize regulatory discards). For 2022, the commercial quota is projected to increase to 11,495 MT. Additional summary regulatory information is available at <https://www.fisheries.noaa.gov/region/new-england-mid-atlantic>.

Recreational landings are negligible. There are no recreational regulations except for party/charter vessel permits and reporting.

Commercial Fishery

Figure 2 below, from the last assessment update describes U.S. butterfish catch 1965-2019. 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 as “2020 dollars.”

Table 1 describes 2020 butterfish landings by state, and Table 2 describes 2020 butterfish landings by gear type. Table 3 describes 2020 butterfish landings by NMFS Statistical Area as reported in Vessel Trip Reports.

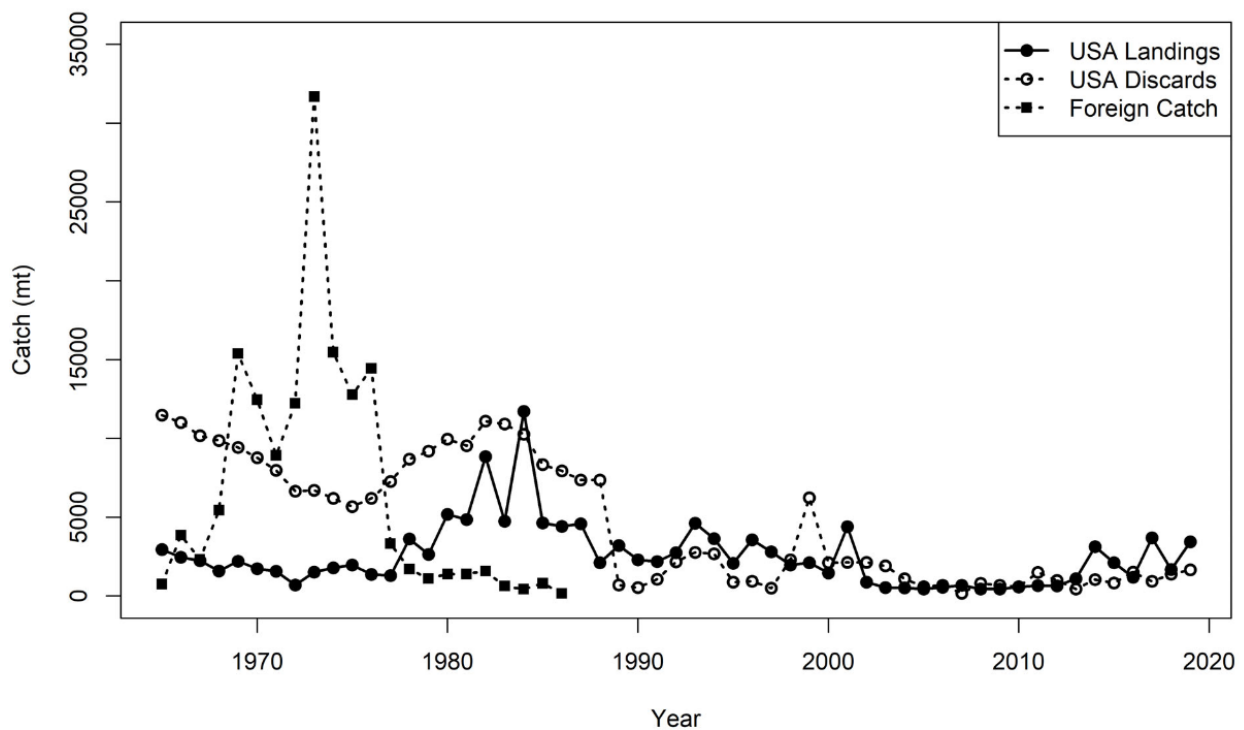


Figure 2. US landings, US discards, and foreign catch of butterfish, 1965–2019. Source: NEFSC Butterfish Management Track Assessment, available at https://apps-nefsc.fisheries.noaa.gov/saw/sasi/sasi_report_options.php.

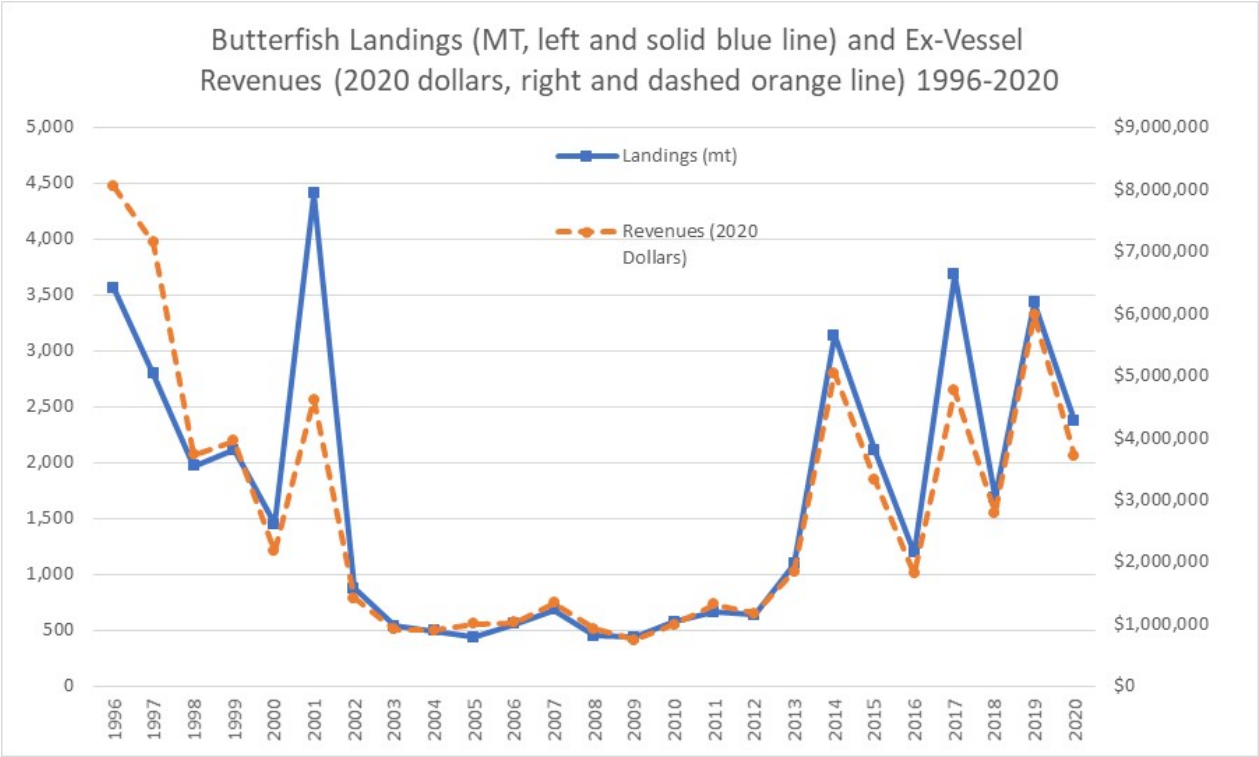


Figure 3. U.S. Butterfish Landings and Butterfish Ex-Vessel Values 1996-2020. Source: NMFS unpublished dealer data.

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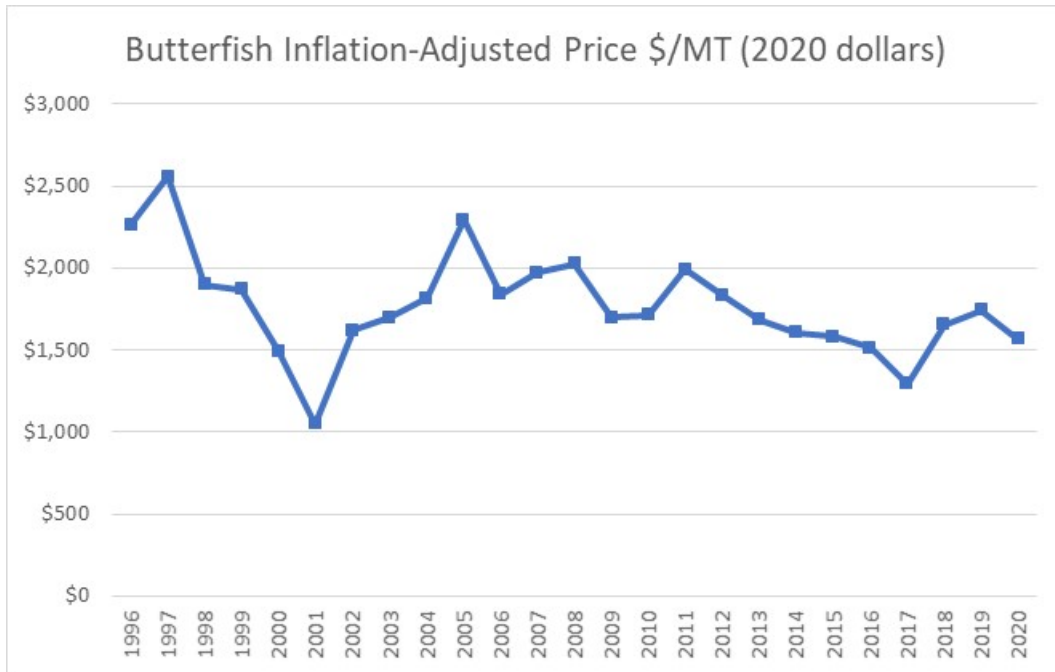


Figure 4. Ex-Vessel Butterfish Prices 1996-2020 Adjusted to 2020 Dollars Source: NMFS unpublished dealer data.

Table 1. Commercial Butterfish landings (live weight) by state in 2020. Source: NMFS unpublished dealer data.

State	Metric_Tons
RI	2,073
NY	177
CT	54
MA	35
NJ	24
Other	5
Total	2,367

Table 2. Commercial Butterfish landings (live weight) by gear in 2019. Source: NMFS unpublished dealer data.

GEAR	Metric_Tons
TRAWL, OTTER, BOTTOM, FISH	2,241
UNKNOWN	94
Other	32
Total	2,367

Table 3. Commercial butterfish landings by statistical area in 2019. Source: NMFS unpublished VTR data.

Stat Area	Metric_Tons
526	1,157
537	715
539	152
616	88
611	82
615	77
613	41
636	32
525	30
622	15
Other	51
Total	2,441

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Date/Time Submitted

05/22/2021 12:46pm

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Topic

Longfin Squid and Butterfish 2022 Specifications Review

Comments

cut quotas on bluefish,surfclam, quohog, squid,
the plastic in the ocean should be attacked by this agency so that we have a clean
ocean. i see absolutely no action on the part of this profiteering group that you service
doing anything to make our ocean cleaner. they make millions of dollars and do not lift
a finger to clean plastic from the ocean. why not shame them and mandate they start
spending some of their time bringning back plastic they find in the ocean. they are
making the money make them do some effort.
stop building more offshore crap.