



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: March 24, 2022
To: Chris Moore, Executive Director
From: Jason Didden, Staff
Subject: Review of **2022 *Illex*** Specifications

The Scientific and Statistical Committee (SSC) and Mackerel, Squid, and Butterfish (MSB) Monitoring Committee (MC) reviewed the most recent information available to determine whether modification of the 2022 specifications is warranted. An increase to the Acceptable Biological Catch (ABC) and associated specifications was recommended, as discussed in the SSC and MC reports. Based on recent years, the in-season adjustment process in the MSB Fishery Management Plan (FMP) should be able to accommodate a change for the 2022 *Illex* fishery. 2023 *Illex* Specifications will be considered later in the year pending the results of the research and/or management track assessments for *Illex*.

The following materials are enclosed on this subject:

- 1) March 2022 SSC Report – See Committee Reports Tab
- 2) MSB MC Report
- 3) MSB Advisory Panel Fishery Performance Report
- 4) *Illex* Fishery Information Document, Council Staff (February 2022)
- 5) *Illex* ABC Staff Recommendation Memo to Chris Moore (March 2022)



MSB Monitoring Committee Meeting Summary - *Illex*

March 18, 2022

Webinar

The Mid-Atlantic Fishery Management Council's (Council) Mackerel, Squid, and Butterfish (MSB) Monitoring Committee met on March 18, 2022 at 1:30 pm. The purposes of this meeting were to develop recommendations regarding 2022 *Illex* Specifications and Mackerel Rebuilding. Given the different topics, two summaries were created – this summary is for *Illex*.

Monitoring Committee Attendees: Jason Didden, Carly Bari, Lisa Hendrickson, Kiersten Curti, Daniel Hocking, and Julia Beaty.

Other Attendees: Greg DiDomenico, Aly Pitts, Meghan Lapp, Pam Lyons Gromen, Katie Almeida, Sonny Gwin, Zachary Greenberg, Kelly Whitmore, Purcie Bennett-Nickerson, Dan Farnham, Melanie Griffin, Megan Ware, and Will Poston.

The MSB Monitoring Committee discussed 2022 *Illex* Specifications in light of the Scientific and Statistical Committee (SSC) increasing the 2022 *Illex* Acceptable Biological Catch (ABC) from 33,000 metric tons (MT) to 40,000 MT. The Monitoring Committee agreed that maintaining the current 4.61% deduction for expected discards seemed appropriate (the average of the 2017-2019 discard rates; range was 3.66%-5.51%). This would yield a commercial quota of 38,156 MT (i.e. for 2022 *Illex* specifications, ABC = 40,000 MT, IOY = DAH = DAP = 38,156 MT).

The Monitoring Committee discussed two options for the closure threshold: either staying with a 94% of quota closure threshold, which would increase the closure buffer to 2,289.4 MT or maintaining the same buffer size as 2021: 1,889 MT. Staff noted that the full quota was not harvested in 2020 or 2021, but there were overages in 2018 and 2019. Discussion noted that improved projection approaches and reporting have both been in place since July 2021 but that it would take a number of years to know if a 94% closure threshold will consistently under-achieve the quota.

With the improved projections (accounting for reporting lag) and improved reporting (48-hour dealer reporting after July 15), a 1,889 MT buffer might be sufficient, but it will be more likely to result in a quota overage than the current 94% closure threshold. If we had a 1,889 MT buffer, and went 3,693 MT above the buffer (worst case in last 5 years), that could lead to a 4.5% ABC overage in 2022 if our discard set-aside is precise.

Remaining catch reporting and closure implementation lags in this high volume fishery, coupled with uncertainty/variability regarding annual productivity, are likely to cause *Illex* to be continue to be difficult to monitor. Daily landings can be as high as 998 MT per day based on recent fishery performance. Given the race to fish before the quota closes, an ABC overage could occur with the higher 94% closure threshold if circumstances were similar to 2019. Given the charge to

the Monitoring Committee to make recommendations that ensure specifications are not exceeded, the Monitoring Committee found no strong rationale to recommend a change from the current 94% closure threshold until more years' closure performance with the recently improved projecting and reporting circumstances can be evaluated.

Public comment summary:

-Industry is committed to adhere to the 48-hour reporting requirements in order to just access 100% of the quota, which supports jobs and economic activity.

-A request was made for similar treatment as black sea bass, in terms of concern (or rather lack thereof) about potential overages in a productive stock - plus *Illex* appears lightly exploited.

-There's a risk of going over or under but less than the full quota has been caught the last two years.

-Closure performance in recent years has been better than other fisheries, and the strengths of the current monitoring need to be understood as well as any potential monitoring challenges (e.g. the successful closures the last two years). The concerns voiced by the Monitoring Committee as justifying setting aside additional quota for a closure buffer are unnecessary.



***Illex* and Atlantic Mackerel
Fishery Performance Reports
February 2022**

The Mid-Atlantic Fishery Management Council's (Council) Mackerel-Squid-Butterfish (MSB) Advisory Panel (AP) met via webinar on February 22, 2022 to review the *Illex* squid and Atlantic mackerel Fishery Information Documents and develop the following Fishery Performance Reports. 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: Eleanor Bochenek, Katie Almeida, Emerson Hasbrouck, Gerry O' Neill, Meghan Lapp, Pam Lyons Gromen, Sam Martin, Zack Greenberg, Dan Farnham Jr, and Greg DiDomenico.

Others present: Jason Didden, Mark Holliday, Will Poston, Purcie Bennett-Nickerson, Mary Beth Tooley, Peter Hughes, Alan Bianchi, Carly Bari, Alissa Wilson, Mike Waine, Tom Miller, and Dave Secor.

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' "fishery information document."

1.2 *Illex* Squid

Market/Economic Conditions

Market conditions/prices seemed relatively similar in 2021 as 2020 - “stable.” Staff noted price increase in 2021 was 7% - an AP member noted that can be just a few cents per pound difference. Seafood in general has seen recent price increases or at least stability.

U.S. suppliers continue to invest in infrastructure to regularly produce quality product. Steady supply from U.S. producers has helped with marketing. Can also get price increases through season as squid get bigger (higher prices for bigger squid) if fishery stays open.

U.S. *Illex* catches do not drive the price of *Illex* – Argentinian *Illex* and Japanese flying squid affect prices. Argentinian *Illex* are in international waters and Chinese fleet catches high volumes – world market dominates price. U.S. landings are a small component. Mark Holliday noted could be useful to have information on scale of other squid species to put U.S. fishery into more definitive context. After the meeting staff queried FAO databases and the 2019 catch of Argentine shortfin squid was listed as about 250,000 metric tons with an “E” noted by Chinese catch, possibly indicating that it is more of an estimate than others.

Environmental Conditions

Work is ongoing to understand environmental drivers – high availability persists. Fishery participants have been working with scientists to better understand how environmental conditions are affecting availability/abundance – it is critical to continue to involve fishermen in related work to understand environmental linkages.

Management Issues

Management should consider ways to achieve 100% of the quota – reconsider the 95% closure threshold. The reporting that exists will not allow substantial overages. The availability/abundance of *Illex* should be taken into account, as abundance appears to be considered when dealing with potential overages in other fisheries such as black sea bass. *Illex* should not be treated differently.

Other Issues

An advisor highlighted the HMS diet study looking at chub mackerel identified *Illex* as important HMS prey in recent years – SSC/Council should be mindful of those results and role of *Illex* in the food web as related to the strategic plan and Ecosystem Approaches to Fishery Management Guidance Document – need to be aware of how prey are, and are not, taken into account. Other advisors opposed delving further into the forage issue as relates to *Illex* and consumption by predators especially given lack of control over those predators’ fisheries. It was noted that for the HMS fisheries that were looked at, they are overfished with overfishing occurring. The low

impacts of the fishery on the stock per working group findings, including that the fishery operates on a small part of the *Illlex* stock, should make this a non-issue

Research Priorities

See environmental considerations section above.

Additional Public Input - NA

1.3 Mackerel

Market/Economic Conditions

Demand has been strong for years – markets have not been a limiting factor. U.S. mackerel have been filling a reliable niche – generally smaller sized fish than European mackerel. U.S. fishery is a small part of overall mackerel trade, but persistent inability to supply will eventually lead to market problems – overseas participants would laugh at our mackerel quantities. After the meeting staff queried FAO databases and the 2019 European catch of Atlantic mackerel was listed as about 825,000 metric tons.

Environmental Conditions

Nothing particularly unusual observed. Few reports of fish from more southern areas.

Management Issues

Early 2021 catches were good near-shore, but once the buffer zone (mid-water trawl/herring) went into effect February 10, 2021 we lost access to those fish. Near-shore fish were also historically helpful given poor winter weather. Would have likely caught the quota in 2021 if access had remained.

There are fish near-shore now (early 2022) also, but again can't access them in 2022. The majority of areas where limited access participants landing with Gerry O'Neill have fished in last 5 years are no longer accessible due to 12-mile herring mid-water trawl restrictions. Herring restrictions affect mackerel. Would like to get more info across the fleet to confirm, but general sense that in 2021/2022 management (buffers) is severely curtailing landings.

Lack of herring RSA inhibits fall mackerel landings in Area 1A.

Horsepower restrictions, and resulting speed limitations, may be affecting the size of the fish that the commercial fishery can catch. Larger fish are faster. Could be an issue to further investigate.

Other Issues/Rebuilding

Need to consider the impact of recreational catch on rebuilding especially given some of the options being considered – can't have unrestricted recreational fishing when there's no commercial quota.

Given management constraints and data collection, need to make sure that sampling (that feeds into the assessment in terms of ages) that is occurring will be representative – across fishery sectors and components of each sector. Also may extend to selectivity assumptions.

Discussion with SSC members attending and AP members highlighted additional uncertainties that may be introduced by how management constraints and data collection may be affecting the fishery-dependent data used by the assessment. How will we know if we are rebuilding given lack of fishery access from management and thus lack of data?

Worth re-considering about whether size-limit measures (like Canada) could benefit mackerel rebuilding. Worth additionally considering how the two (Canada and U.S.) rebuilding approaches may complement each other (or not).

Research Priorities

Refer to above issues identified with rebuilding.

Additional Public Input - NA



***Illex* Fishery Information Document**

February 2022

This Fishery Information Document provides a brief overview of the biology, stock condition, management system, and fishery performance for *Illex* squid 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 was the fifth banner year in a row for *Illex*. 2017-2021 represent a unique sequence in the history of the fishery of consecutive “boom” *Illex* years.
- Price and landings, and therefore revenues, were up in 2021 compared to 2020.
- Substantial variability is to be expected with any squid species.
- A soon-to-be-reviewed stock assessment should provide guidance for 2023 – in March 2022 the SSC will be considering if any adjustments are appropriate for just 2022, based on previous analyses but with an expanded range.

Basic Biology

Illex is a semi-pelagic/semi-demersal schooling cephalopod species distributed between Newfoundland and the Florida Straits, and lives less than one year. *Illex* is a semelparous, terminal spawner whereby spawning and death occur within several days of mating. The northern stock component, located north of the USA-Canada border in NAFO Subareas 3 and 4, is assessed annually and is managed by the Northwest Atlantic Fisheries Organization (NAFO), though landings have been relatively low in recent years and staff has questioned the usefulness of the recent NAFO assessments (https://www.mafmc.org/s/g_NAFO_Didden.pdf). The southern/U.S. stock component is located in NAFO Subareas 5 and 6 between the Gulf of Maine and Cape Hatteras, NC and is managed by the Mid-Atlantic Fishery Management Council (the Council or MAFMC). 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

The status of *Illex* is unknown with respect to being overfished or not, and unknown with respect to experiencing overfishing or not. Results from the NEFSC Trawl surveys are highly variable

and without apparent long-term trend. Analysis reviewed by the Council’s SSC have supported quota increases in recent years, in 2021 finding: “Based on evidence presented to it, including patterns that suggest an increase in abundance, low levels of exploitation, and catches that have been constrained by existing ABCs for the last four years, the SSC continues to believe that the *Illex* stock is at a high level of abundance and experiencing a low exploitation rate.”

<https://www.mafmc.org/ssc-meetings/2021/may-11-12>

An *Illex* research track assessment is pending review and may provide additional guidance for setting quotas in 2023 and beyond.

Management System and Fishery Performance

Management

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

Access is limited with moratorium permits. Trip limits are triggered when the quota is approached. Incidental permits are limited to 10,000 pounds per trip. Additional summary regulatory information is available at <https://www.fisheries.noaa.gov/new-england-mid-atlantic/resources-fishing/resources-fishing-greater-atlantic-region>. A 2020 action to change *Illex* permitting is in the rulemaking process and a proposed rule is expected in 2022 – see <https://www.mafmc.org/newsfeed/2020/council-approves-changes-to-management-of-illex-fishery>.

The current quota is 31,478 MT, based on a 33,000 MT Acceptable Biological Catch (ABC) and a 4.52% discard rate (the mean plus one standard deviation of the most recent 10 years of observed discard rates in the last assessment). Recent SBRM discard rates have been similar, though are not based on calendar years. The fishery closes when 95% of the quota is projected to be landed and in 2021 closed effective 0001 hour August 30, 2021. In 2021 97.6% of the quota was landed.

Recreational catch of *Illex* is believed to be negligible. There are no recreational regulations except for party/charter vessel permits and reporting.

Commercial Fishery

Figure 1, from a previous Science Center data update, describes *Illex* catch 1963-2019 and highlights the early foreign fishery and then domestication of the fishery. Figures 2-3 describe domestic landings, ex-vessel revenues, and prices (inflation adjusted) since 1996. Figure 4 illustrates preliminary weekly 2020 (yellow-orange) and 2021 (blue) landings through the year.

Table 1 describes 2021 *Illex* landings by state, and Table 2 describes 2021 *Illex* landings by gear type. Table 3 provides preliminary information on *Illex* landings by statistical area for 2021.

Table 4 describes vessel participation over time.

The Gross Domestic Product Implicit Price Deflator was used to report revenues/prices as “2021 dollars.”

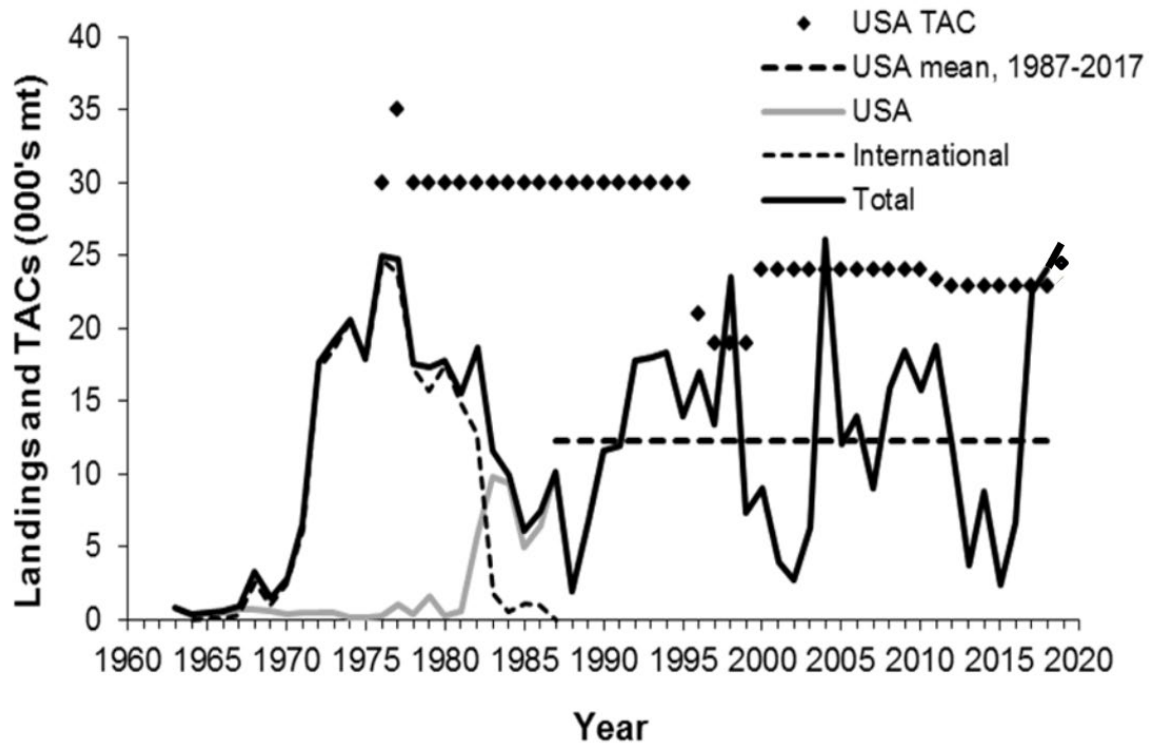


Figure 1. Total annual *Illlex* landings (mt) by the U.S. and other countries for 1963-2019. Sources: NEFSC *Illlex* Data update, available at <http://www.mafmc.org/ssc-meetings/2018/may-8-9> and NMFS unpublished dealer data.

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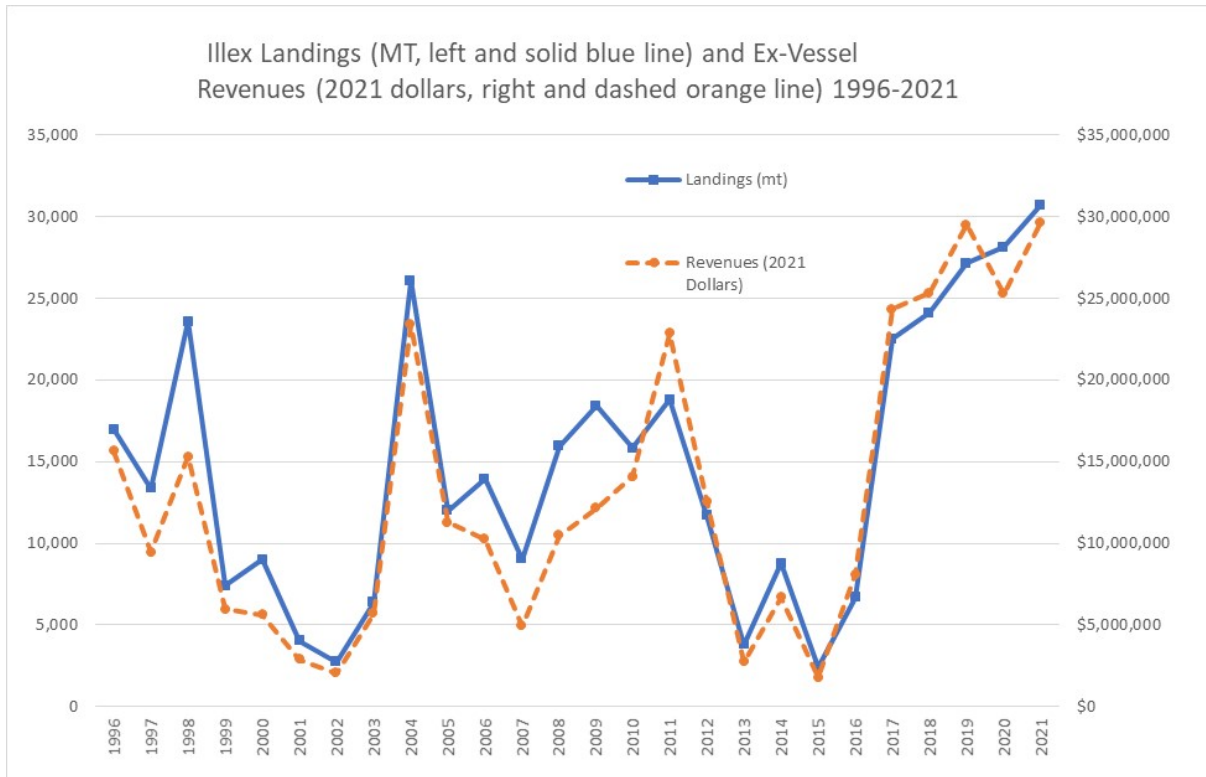


Figure 2. U.S. *Illex* Landings and Ex-Vessel Values 1996-2021. Source: NMFS unpublished dealer data.

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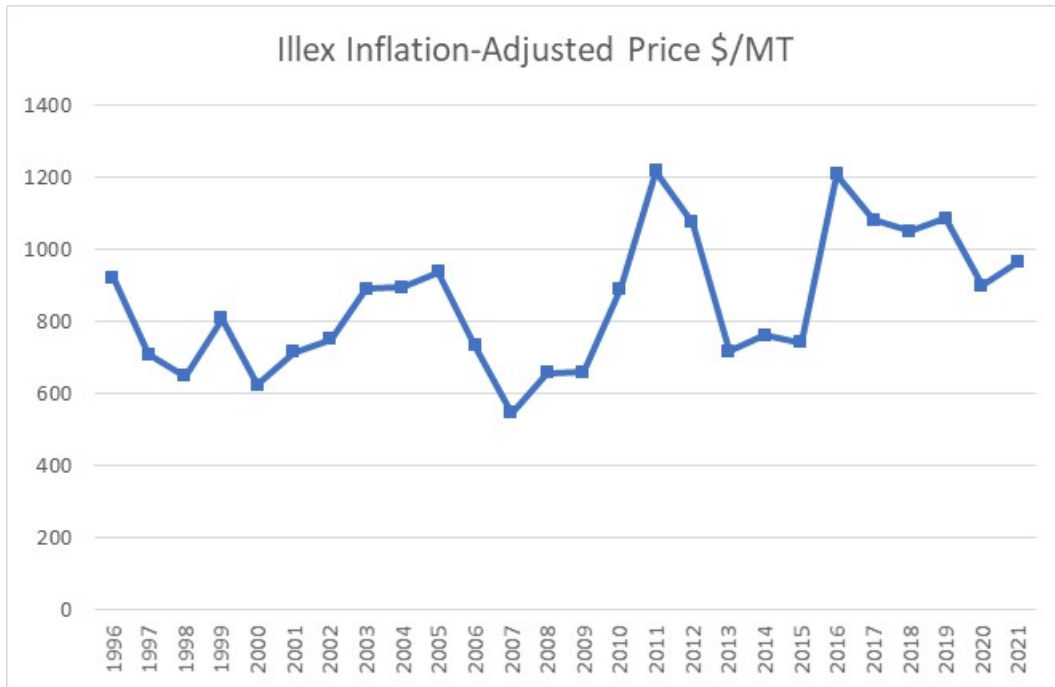


Figure 3. Ex-Vessel *Illex* Prices 1996-2021 Adjusted to 2021 Dollars Source: NMFS unpublished dealer data.

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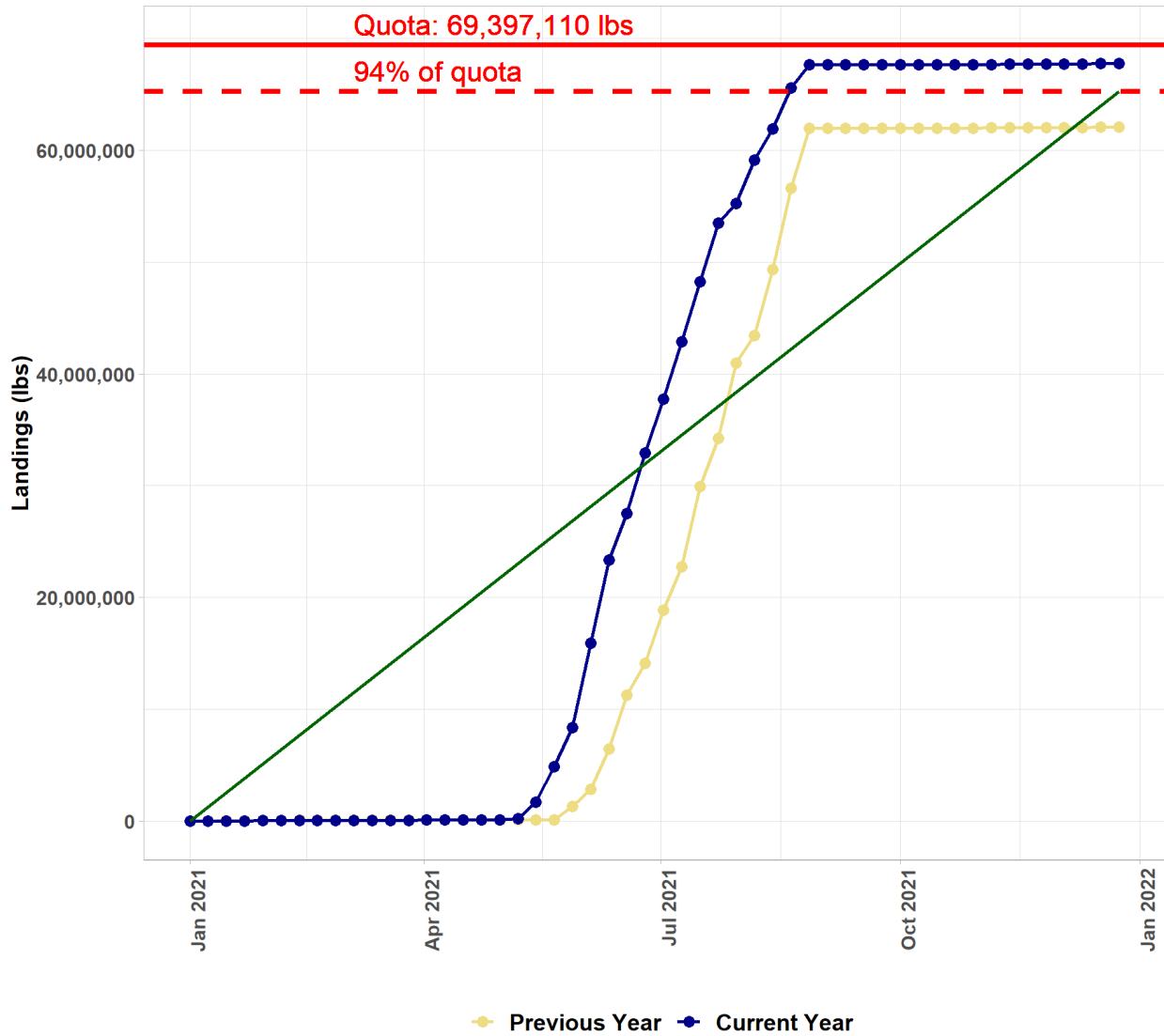


Figure 4. U.S. Preliminary *Illex* landings; 2021 in blue, 2020 in yellow-orange. Source: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region>

Table 1. Commercial *Illex* landings (live weight) by state in 2021. Source: NMFS unpublished dealer data.

Most 2021 *Illex* landings occurred in RI, NJ, and MA (in that order), but further breakdown may violate data confidentiality rules (in spirit if not to the letter).

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

GEAR	Metric_Tons
Otter Trawl	29,383
Midwater Trawl	1,063
UNKNOWN	266
Other	3
Total	30,714

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

NEMAREA	MT
622	17,988
526	3,714
537	2,852
616	1,710
626	1,504
623	920
632	543
636	269
621	193
627	134
Other	265
Total	30,091

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

YEAR	Vessels 500,000+	Vessels 100,000 - 500,000	Vessels 50,000 - 100,000	Vessels 10,000 - 50,000	Total
1982	7	7	0	10	24
1983	1	8	7	11	27
1984	4	15	4	6	29
1985	2	6	4	3	15
1986	8	6	4	3	21
1987	7	10	2	1	20
1988	3	3	1	2	9
1989	8	5	1	3	17
1990	12	3	0	1	16
1991	12	1	1	0	14
1992	16	1	0	1	18
1993	19	3	1	3	26
1994	21	7	5	8	41
1995	24	5	2	7	38
1996	24	5	6	4	39
1997	13	9	2	0	24
1998	25	4	1	3	33
1999	6	9	2	10	27
2000	7	7	0	2	16
2001	3	4	1	2	10
2002	2	3	1	1	7
2003	5	6	1	2	14
2004	23	5	2	0	30
2005	10	10	2	2	24
2006	9	8	1	2	20
2007	8	2	1	0	11
2008	12	5	0	0	17
2009	10	3	1	1	15
2010	13	5	0	4	22
2011	17	4	2	0	23
2012	8	3	2	2	15
2013	5	4	3	5	17
2014	5	3	2	2	12
2015	3	0	1	1	5
2016	4	3	3	2	12
2017	14	6	0	0	20
2018	19	7	0	5	31
2019	26	6	0	3	35
2020	25	4	2	1	32
2021	23	8	0	2	33

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

MEMORANDUM

Date: March 9, 2022
To: Chris Moore, Executive Director
From: Jason Didden, staff
Subject: *Illex* ABC – Staff Recommendation

As part of the specification process for *Illex* squid, the Scientific and Statistical Committee (SSC) and Council will review the most recent information available to determine whether modifications of the 2022 *Illex* Acceptable Biological Catch (ABC) and other/or specifications are warranted. 2023 specifications will be considered later in the year after a management track assessment is completed. A research track assessment for *Illex* was being reviewed at the same time this memo was created, but the research track assessment process is not generally designed to immediately inform management.

The *Illex* squid fishery is currently under single-year specifications for 2022, and the current ABC is 33,000 metric tons (MT). The current ABC was set in 2021 after review and SSC endorsement of a 10% ABC increase. Analyses conducted by Dr. Paul Rago under contract with the Council supported that 10% increase. Dr. Rago recently updated those analyses with a wider range of potential ABC modifications for this meeting, which the SSC was consulted about, as requested (12/14/2021 email).

2021 *Illex* landings totaled approximately 30,714 MT, a record high for this fishery in U.S. waters. The 2021 fishery closed August 30, 2021, at a time of high weekly landings. 2021 *Illex* landings ran about 2-3 weeks ahead of 2020 landings, and the increased ABC/quota allowed the 2021 fishery to close on nearly the same date as the 2020 fishery (the 2020 fishery was similar to the 2019 fishery). The Mackerel, Squid, and Butterfish (MSB) Advisory Panel reported that 2021 market conditions appeared stable relative to 2020.

The Council's risk policy per the current regulations states:

(d) Stock without an OFL or OFL proxy.

(1) If an OFL cannot be determined from the stock assessment, or if a proxy is not provided by the SSC during the ABC recommendation process, ABC levels may not be increased until such time that an OFL has been identified.

(2) The SSC may deviate from paragraph (d)(1) of this section, provided that the following two criteria are met: Biomass-based reference points indicate that the stock is greater than BMSY and stock biomass is stable or increasing, or if biomass based reference points are not available, best available science indicates that stock biomass is stable or increasing; and the SSC provides a determination that, based on best available science, the recommended increase to the ABC is not expected to result in overfishing. Any such deviation must include a description of why the increase is warranted, description of the methods used to derive the alternative ABC, and a certification that the ABC is not likely to result in overfishing on the stock.

Dr. Rago's analysis suggests that if a 50% escapement target is appropriate and the stock is at or above Bmsy, then quotas up to 60,000 MT would be consistent with the Council's risk policy, while if the stock is at 50% of Bmsy, then the maximum quota consistent with the Council's risk policy is 47,000 MT. Dr. Rago's analysis also found that if a $F=2/3 M$ threshold is appropriate and the stock is at 50% of Bmsy, then the maximum quota would be 40,000 MT to be consistent with the Council's risk policy.

Given these findings and the current uncertainty (as of 3/9/2022) about the outcome of the *Illex* research track assessment, staff recommends an additional 10% ABC increase to 36,300 MT for 2022 as unlikely to result in overfishing of the stock, and as an incremental approach that reduces the chance of inducing large changes in fishing mortality.