Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 29, 2022

To: Council

From: Jason Didden, Staff

Subject: 2023 *Illex* Specifications

The Council will set 2023 *Illex* specifications at the August 2022 meeting. These will be preliminary specifications in that the Scientific and Statistical Committee (SSC) may recommend changes in March 2023. The Monitoring Committee reached consensus on recommendations for *Illex* specifications – please see the Monitoring Committee summary (and other supporting documents) attached below:

- Monitoring Committee Summary
- SSC Report – See Committee Reports Tab
- 2022 Research Track Assessment available via July 2022 SSC meeting page: https://www.mafmc.org/ssc-meetings/2022/july-25-26
- Staff ABC Recommendation Memo to Chris Moore
- Fishery Performance Report (see also question on *Illex* at end of Butterfish Fishery Performance Report in Butterfish Specifications Tab)
- Fishery Information Document

MSB Monitoring Committee Meeting Summary - *Illex*

July 28, 2022
Webinar

The Mid-Atlantic Fishery Management Council's (Council) Mackerel, Squid, and Butterfish (MSB) Monitoring Committee met on July 28, 2022. The purposes were to develop recommendations regarding 2023-2024 butterfish specifications and 2023 *Illex* specifications. Given the different topics, two summaries were created – this summary is for *Illex*.

Monitoring Committee Attendees: Jason Didden, Aly Pitts, Lisa Hendrickson, and Chuck Adams.

Other Attendees: Greg DiDomenico, Meghan Lapp, and Melanie Griffin.

The MSB Monitoring Committee developed 2023 *Illex* specifications recommendations in light of the Scientific and Statistical Committee's (SSC) 40,000 metric ton (MT) Acceptable Biological Catch (ABC) recommendation for 2023.

The Monitoring Committee noted that based on action earlier in 2022, an adjustment to the 2022 *Illex* specifications is anticipated soon, which would set an ABC of 40,000 MT and a quota of 38,156 MT after discards are accounted for. The adjustment should also change the closure threshold from 94% to 96%.

Given the SSC did not change the ABC at this time, and considering recent fishery performance, the Monitoring Committee recommended that the likely soon to be adjusted specifications be maintained.

The Monitoring Committee noted the plans for the SSC to review the 2023 *Illex* ABC in March 2023 and consider any ABC modifications once a series of analyses considering reasonable *Illex* escapement bounds are updated with 2022 data. Staff plans to include an expanded range of ABCs and quotas in the standard specifications Environmental Assessment so that any appropriate early 2023 adjustments (up or down) can be implemented relatively quickly.

Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 15, 2022

To: Chris Moore, Executive Director

From: Jason Didden, staff

Subject: 2023 preliminary specifications for *Illex* squid

Executive Summary

The 2022 Research Track Assessment peer reviewers concurred with the *Illex* working group that the *Illex* stock "was lightly fished in 2019."

The 2022 Acceptable Biological Catch (ABC) for *Illex* recommended by the SSC and the Council was 40,000 MT. Staff recommends a preliminary ABC of 40,000 MT for 2023 to be revisited in March 2023 after the NMFS Northeast Fisheries Science Center updates relevant analyses.

Additional information on fishery performance and past management measures can be found in the 2022 *Illex* Fishery Information Document created by staff and the 2022 *Illex* Fishery Performance Report developed by the Mackerel-Squid-Butterfish (MSB) Advisory Panel (AP). There is also additional input on *Illex* from the MSB AP for early 2022 at the end of the 2022 Butterfish Fishery Performance Report.

The Council will meet in August 2022 to review the recommendations of the AP, the SSC, the MSB Monitoring Committee, as well as receive input from the public. The Council will then recommend catch and landings limits and other management measures for 2023, which would be preliminary and subject to an in-season adjustment in early 2023.

Current Measures and Review of Prior SSC Recommendations

The last setting of *Illex* specifications occurred early in 2022, and the SSC utilized a series of analyses to recommend a 40,000 MT ABC for 2022. From the 40,000 MT ABC for 2022, 4.52% would be set aside for potential discards, and the remaining catch constitutes a quota of 38,156 MT.

The directed fishery operates under limited access, and open access/incidental permits are limited to 10,000 pounds per trip. The directed limited access fishery does not start with trip limits, but the fishery is slowed with a 10,000-pound trip limit for all permits once 94% of landings are projected to have occurred. This threshold has been recommended by the Council to increase to 96% this year (NMFS decision/rule pending).

Recent Catch and Landings

Landings have been high and quotas were reached from 2017-2021. See Figure 1 in the *Illex* Fishery Information Document for additional information. The 2022 *Illex* Fishery Performance Report documents industry perspectives on why recent landings have been high. In addition, the 2022 Butterfish Fishery Performance Report (see *Illex* section near end) documents industry perspectives on why 2022 *Illex* landings have been lower to date compared to recent years.

Stock Status and Biological Reference Points

The 2022 Research Track Assessment peer reviewers concurred with the *Illex* working group that the *Illex* stock "was lightly fished in 2019." The reviewers noted that "the term 'lightly fished' needs to be interpreted with caution since it has no specific definition relating to sustainable exploitation."

Staff Recommendation

There is not much new information regarding *Illex* compared to March 2022 when the SSC set the 40,000 MT *Illex* ABC for 2022. Staff recommends maintaining 40,000 MT as a preliminary 2023 ABC, and then revisiting the *Illex* ABC for 2023 in March 2023, after 2022 data can be used to update relevant analyses. As part of the 2023 specifications for *Illex*, staff plans a broadened range of ABCs in associated National Environmental Policy Act (NEPA) documents, which should facilitate rapid modification of the 2023 *Illex* specifications if appropriate.

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 availably 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 *Illex* 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."

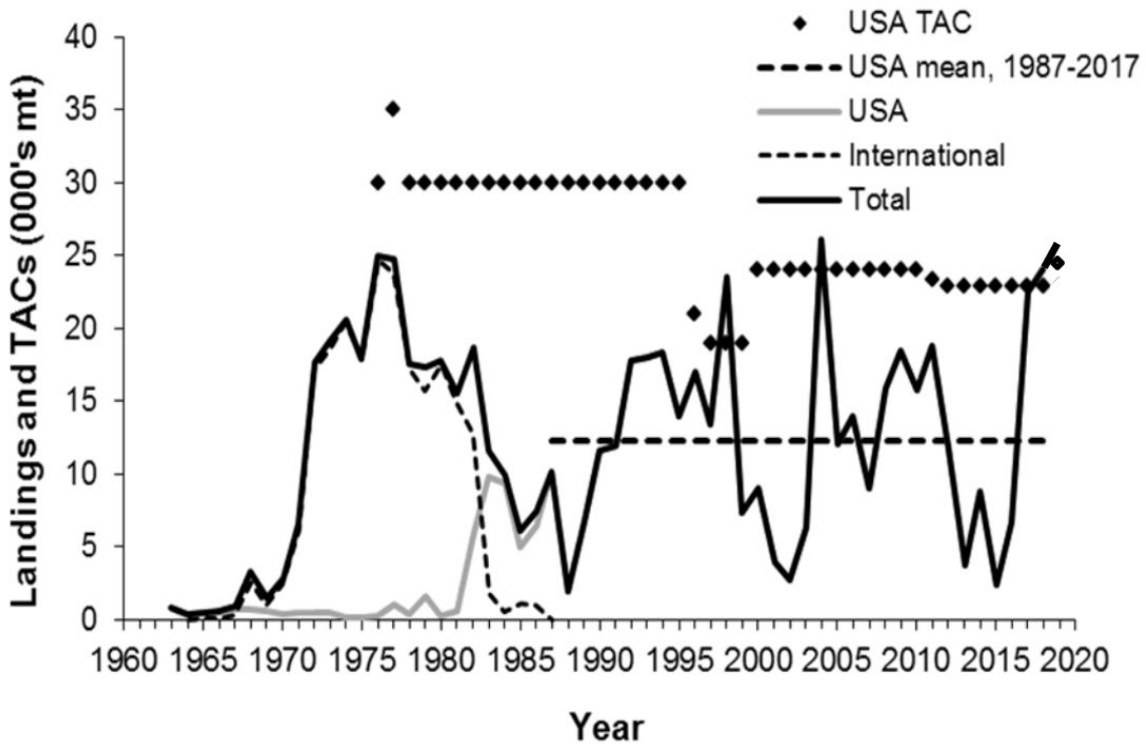

Figure 1. Total annual *Illex* landings (mt) by the U.S. and other countries for 1963-2019. Sources: NEFSC *Illex* Data update, available at http://www.mafmc.org/ssc-meetings/2018/may-8-9 and NMFS unpublished dealer data.

THIS SPACE INTENTIONALLY LEFT BLANK

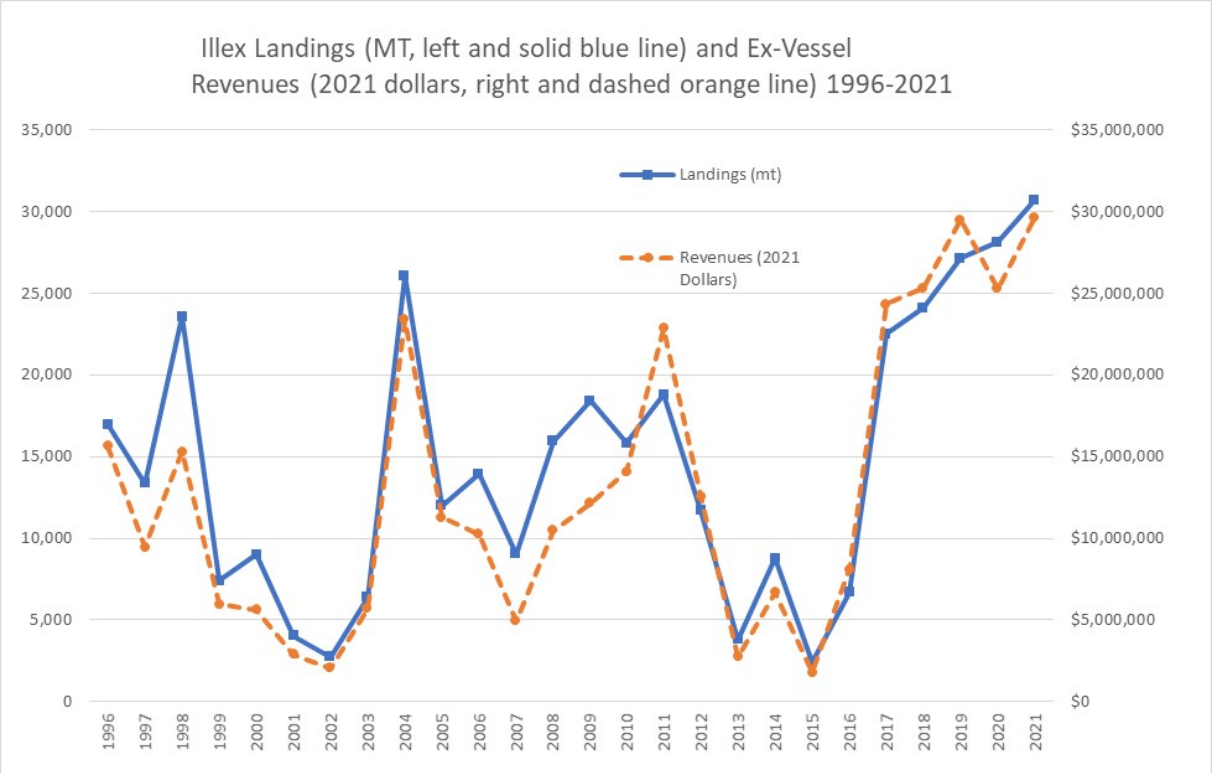

Figure 2. U.S. *Illex* Landings and Ex-Vessel Values 1996-2021. Source: NMFS unpublished dealer data.

THIS SPACE INTENTIONALLY LEFT BLANK

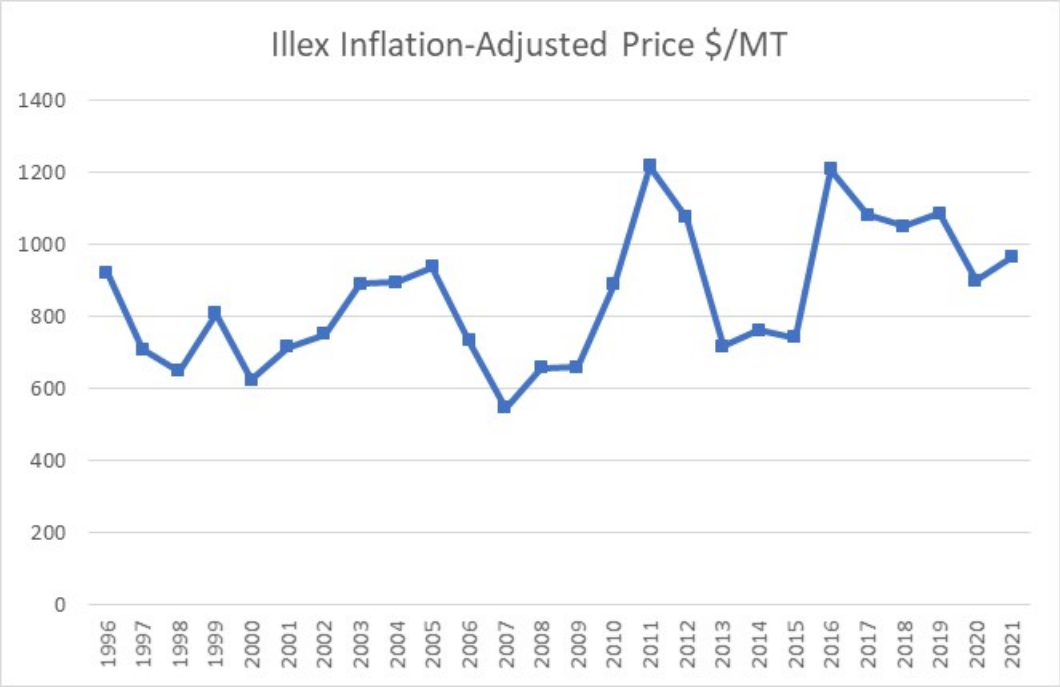

Figure 3. Ex-Vessel *Illex* Prices 1996-2021 Adjusted to 2021 Dollars Source: NMFS unpublished dealer data.

THIS SPACE INTENTIONALLY LEFT BLANK

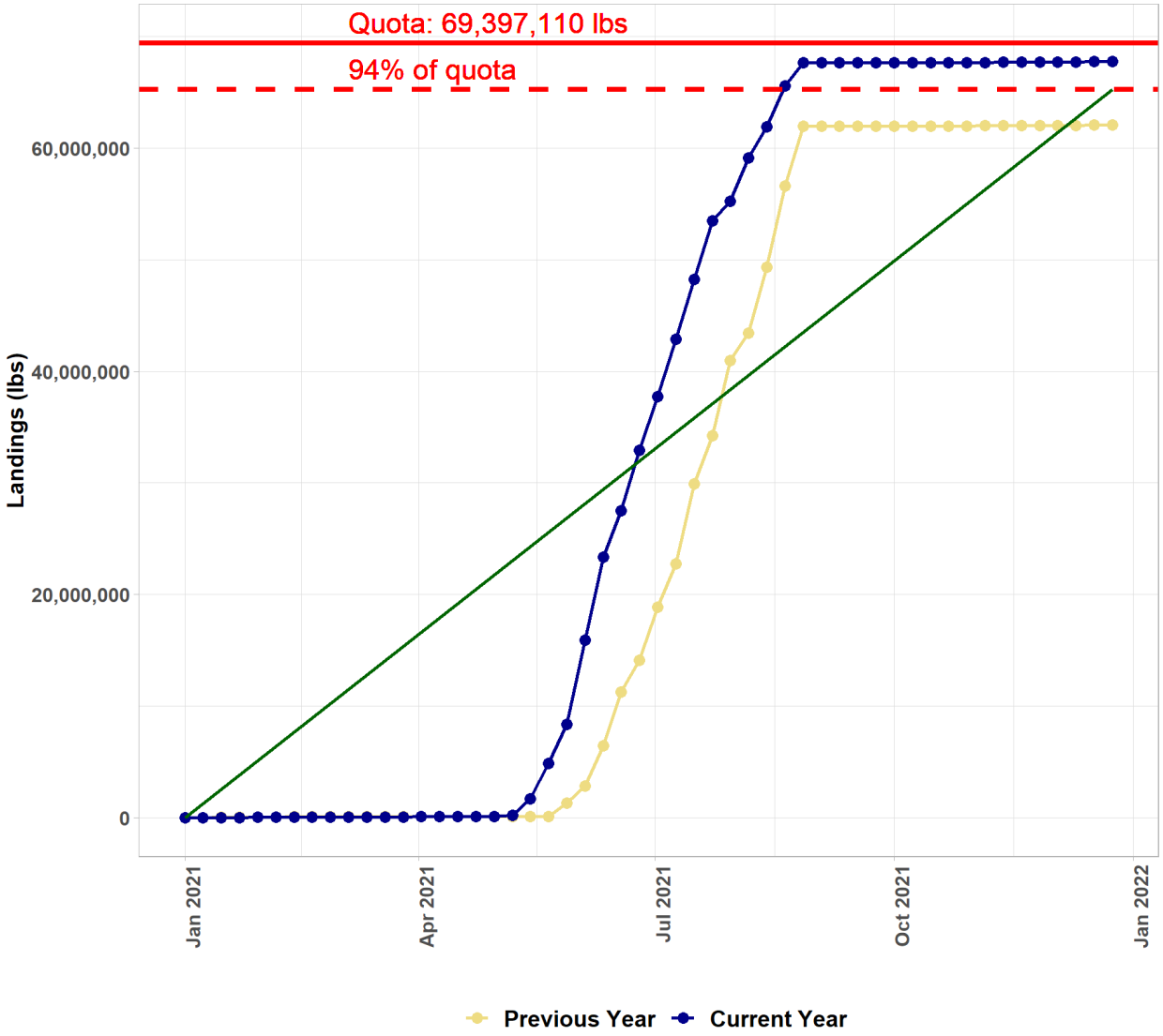

Figure 4. U.S. Preliminary *Illex* landings; 2021 in blue, 2020 in yellow-orange. Source: https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region

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

THIS IS THE END OF THE DOCUMENT