



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: September 23, 2020
To: Council
From: Jason Didden, staff
Subject: Spiny Dogfish Monitoring Committee (SDMC) Summary and 2021-2022 Specifications Recommendations¹

The SDMC met on September 14, 2020. SDMC members present included Jason Didden, Chris Kellogg, Conor McManus, Cynthia Ferrio, Nichola Meserve, Angel Willey, Kathy Sosebee, David Behringer, and Scott MacDonald (ex officio). Other participants included Kirby Rootes-Murdy, June Lewis, Jim Fletcher, Allison Ferreira, Janice Plante, David Stormer, Sonny Gwin, Greg DiDomenico, Scott Curatolo-Wagemann, and John Whiteside.

Given the Scientific and Statistical Committee's Acceptable Biological Catch (ABC) recommendation, the SDMC recommends using the new ABC to formulate 2021/2022 fishing year quotas using updated information where applicable (see Table 1 below). This would increase the commercial quota by 27% from 2020 to 2021 (under the originally adopted 2021 specifications, the quota would have increased 18% from 2020).

Related to its task to recommend measures necessary to avoid exceeding the Annual Catch Limit, the SDMC concluded that changes to the current 6,000 pound trip limit do not appear necessary. The SDMC noted that as long as the states are adhering to their quotas based on the overall ABC/ACL, different trip limits should not affect stock size. Major changes, such as removing the federal trip limit or removing the complete closure once 100% of the quota is caught, are more appropriate for frameworks or amendments where more analysis and public comment can be evaluated. If there were no federal trip limits then vessels would be governed by state limits when in state waters. The interplay of trip limits and prices may make it difficult to predict fishery responses to modified trip limits. J. Didden noted that due to workload constraints (no spiny dogfish action was planned for 2020), MAFMC staff would likely not be able to complete an Environmental Assessment (EA) needed to consider substantial trip limit changes. An abbreviated NEPA document can be used however to change just the specifications/quota. NMFS staff noted that potentially New England Fishery Management Council (NEFMC) staff could develop such

¹ Other related materials included in the briefing book: SSC Report (see Committee Reports Tab); Staff ABC Memo; AP Fishery Performance Report; and Fishery Information Document.

an EA if the NEFMC deemed trip limits to be a high priority. The Councils could consider trip limit changes via a separate future action if desired/prioritized.

Follow-up by NMFS-GARFO staff indicated that it might be possible from a NEPA perspective to consider a trip-limit change up to 7,000-8,000 pounds via the abbreviated document **if** the case could be made that there have been no significant changes in the fishery/environment, and that the previous analyses addressed the likely impacts. However, given the previous document examining trip limits (the 2016-2018 Specifications EA) only included data through 2014 and acknowledged the uncertainty about price effects from additional trip limit changes, Council staff recommends that further trip limit changes be considered via a separate action that could more fully use recent data to consider socio-economic impacts. A separate action would also facilitate public awareness and participation – given the fishery is in the middle of multi-year specifications, fishery participants may not be expecting consideration of trip limit changes. Staff also notes that some advisors supported reconsidering trip limits and some advisors opposed any changes at this time.

Table 1. Spiny Dogfish Specifications

Specifications	Basis for Original 2019-2021 Specifications	2019 (pounds)	2019 (mt)	2020 (pounds)	2020 (mt)	2021 Original (pounds)	2021 Original (mt)	2021 Revised/2022 (pounds)	2021 Revised/2022 (mt)	Basis for Revised 2021 (and 2022) Specifications
OFL (from SSC)	Projected Catch at Fmsy	47,507,413	21,549	na	na	na	na	na	na	na
ABC (from SSC)	Council Risk Policy	28,470,497	12,914	31,142,499	14,126	35,368,761	16,043	38,576,487	17,498	SSC, Revised Council Risk Policy
Canadian Landings	= 2017 estimate	108,027	49	108,027	49	108,027	49	99,208	45	= 2018 estimate
Domestic ABC	= ABC – Canadian Landings	28,362,470	12,865	31,034,473	14,077	35,260,734	15,994	38,477,279	17,453	= ABC – Canadian Landings
ACL	= Domestic ABC	28,362,470	12,865	31,034,473	14,077	35,260,734	15,994	38,477,279	17,453	= Domestic ABC
Mgmt Uncert Buffer	Ave pct overage since 2011	0	0	0	0	0	0	0	0	Ave pct overage since 2011
ACT	= ACL - mgmt uncert buffer	28,362,470	12,865	31,034,473	14,077	35,260,734	15,994	38,477,279	17,453	= ACL - mgmt uncert buffer
U.S. Discards	= 3 year average 2015-16-17	7,661,064	3,475	7,661,064	3,475	7,661,064	3,475	8,800,854	3,992	= 3 year average 2016-17-18
TAL	ACT – Discards	20,701,406	9,390	23,373,409	10,602	27,599,671	12,519	29,676,425	13,461	ACT – Discards
U.S. Rec Landings	= 2017 estimate	178,574	81	178,574	81	178,574	81	116,845	53	= 2019 estimate
Comm Quota	TAL – Rec Landings	20,522,832	9,309	23,194,835	10,521	27,421,096	12,438	29,559,580	13,408	TAL – Rec Landings

The 2021/2022 Specifications recommended by the SDMC





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

MEMORANDUM

Date: August 26, 2020
To: Chris Moore
From: Jason Didden
Subject: Spiny Dogfish Acceptable Biological Catch (ABC)

Spiny Dogfish is in multi-year specifications for 2019-2021. The Council's Scientific and Statistical Committee (SSC) is scheduled to review the 2021 dogfish ABC (year 3 of 3) during its September 2020 meeting. The Dogfish ABC is scheduled to increase from 14,126 MT (31.1 million (mil) pounds (lbs)) in 2020 to 16,043 MT (35.4 mil lbs) in 2021, per earlier recommendations.

Given the cancelation of the spring trawl survey, there is no separate document from NMFS with a data update. Updated landings data are available in the fishery information document, which has been posted to the SSC meeting page, along with the Advisory Panel's Fishery Performance Report. A total of 91% (18.6 mil lbs) of the 2019 quota (20.5 mil lbs) was landed.

Staff does not perceive any substantial change in this fishery since it was last reviewed by the SSC. The Council did pass an updated risk policy, which tolerates a slightly higher risk of overfishing and generates higher ABCs. Using the updated risk policy with the projections previously conducted would result in a revised 2021 ABC of 17,498 MT (38.6 mil lbs). The presumed 2021 overfishing level given previous projections and ABCs (assuming the ABCs were caught) would be 25,077 MT (55.3 million pounds). The original P*s for 2019-2021 were 0.269, 0.274, and 0.296. The revised P* for 2021 would be 0.333. Projections have not been fully redone since dead discard information is not available – the revised ABC is just a result of the new risk policy.

Staff recommends updating the 2021 ABC to 17,498 MT (38.6 mil lbs) per the Council's revised risk policy. Staff also recommends that the same ABC recommendation be considered for the 2022 fishing year. We are expecting a research track assessment in 2022, and there could be substantial administrative efficiencies by setting specifications now for both 2021 and 2022.



Spiny Dogfish AP Fishery Performance Report August 2020

The Mid-Atlantic Fishery Management Council's (Council) Spiny Dogfish Advisory Panel (AP) met via webinar on August 19, 2020 to review the Spiny Dogfish Fishery Information Document and develop the following Fishery Performance Report. The primary purpose of this 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. Trigger questions (see below) were posed to the AP to generate discussion of observations in the spiny dogfish fishery. Advisor comments described below are not necessarily consensus or majority statements.

Advisory Panel members attending: Bonnie Brady, Scott Curatolo-Wagemann, Jim Fletcher, Sonja Fordham, Scott MacDonald, John Whiteside, Jr., and Douglas Zemeckis. **Others attending:** Jason Didden, Ron Larsen, Kirby Rootes-Murdy, Chris Batsavage, Stephanie Sykes, Nichola Meserve, Paul Rago, Allison Ferreira, Angel Willey, Yan Jiao, and Cynthia Ferrio.

Trigger questions:

The AP was presented with the following trigger questions:

1. What factors have influenced recent catch (markets/economy, environment, regulations, other factors)?
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?

Market/Economic Conditions

COVID-19 has not had a large impact to date. Similar market issues persist as with previous years – demand has been low but stable recently.

Changing the name to Chip Fish would help with marketing/exports.

There are no Southern processors – they were “burnt” by previous management and won’t get back in without quota stability on a decadal timeframe. They would need to know that the quota won’t go down for 5-10 years.

Not having a processor also depresses NY landings. NY would like some opportunity for trawlers: a bi-monthly larger landing or something similar. Developing other markets, be it fertilizer or processed export, requires a higher trip limit for trawlers, for example a 30,000-pound trip limit 2-3 times per month.

Regarding the fin market – there are self-imposed bans by cargo lines than prohibit fin

transport even from sustainable sources (i.e. this is beyond our control).

Environmental Conditions

Environmental conditions are always a factor. Ongoing mild winter weather in VA has increased VA landings.

Further north in 2020, dogfish have been offshore and vessels have had trouble landing the trip limit, leading to less participation and less landings so far in 2020.

Management Issues

Regulations (especially the trip limit) do not allow a male fishery. State regulations do not allow new fishermen to participate. The current regulations are geared to keep price up and production limited and do not allow industrial production.

Other Issues

Given the lack of an off-shelf survey and vertical water column usage by dogfish, we don't really know the population size.

Allowing dogfish populations to increase has hurt all other fish populations. We need calculations regarding consumption by dogfish of other fish.

With the recent executive order, we need to look at opening way up beyond any recent proposals.

Research Priorities

To add fishery value, we should research the value and production of squalamine in spiny dogfish livers for medical use.

The assessment needs to account for the continual pup production observed in females, which is primarily affected by food availability/consumption.

We should conduct research into the purposes of the horn/spine – is it offensive (weakening potential prey), or defensive?



Spiny Dogfish Fishery Information Document

August 2020

This Fishery Information Document provides a brief overview of the biology, stock condition, management system, and fishery performance for spiny dogfish (*Squalus acanthias*) with an emphasis on recent data. Data sources for Fishery Information Documents are generally from 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/dogfish>.

Key Facts

- 2019 fishing year landings were about 18.6 million pounds; 2018 fishing year landings were about 17.6 million pounds.
- The current 2020 fishing year quota is 23.2 million pounds.
- The 2021 quota would increase to 27.4 million pounds under previously-adopted multi-year specifications if no changes are recommended by the Scientific and Statistical Committee (SSC) or the Council. If projections are amended and accepted by the SSC just based on the Council's new risk policy, the 2021 quota could approximately increase by another 3 million pounds to around 30 million pounds.
- Due to the cancellation of the Spring NMFS trawl survey, there is not much data to update so there is not a separate data update document from NMFS. 2019 calendar year landings (calendar year is used in the assessment but not management) were 17.4 million pounds. The previous data update is available at https://www.mafmc.org/s/3_2019-Data-Update-for-spiny-dogfish.pdf.

Basic Biology

Spiny dogfish is a coastal shark with populations on the continental shelves of northern and southern temperate zones throughout the world. It is the most abundant shark in the western north Atlantic and ranges from Labrador to Florida, but is most abundant from Nova Scotia to Cape Hatteras, North Carolina. Its major migrations on the northwest Atlantic shelf are north and south, but it also migrates inshore and offshore seasonally in response to changes in water temperature. Spiny dogfish have a long life, late maturation, a long gestation period, and relatively low fecundity, making them generally vulnerable to depletion. Fish, squid, and ctenophores dominate the stomach contents of spiny dogfish collected during the Northeast Fisheries Science Center (NEFSC) bottom trawl surveys, but spiny dogfish are opportunistic and

have been found to consume a wide variety of prey. More detailed life history information can be found in the essential fish habitat (EFH) source document for spiny dogfish at: <https://www.fisheries.noaa.gov/region/new-england-mid-atlantic#science>.¹

Status of the Stock

Based on the current biomass reference point and an assessment update considering data through spring of 2018 (available at <http://www.mafmc.org/ssc-meetings/2018/sept-11>), the spiny dogfish stock is not overfished or experiencing overfishing. The 2018 biomass was 67% of the target. Fishing mortality in 2017, the most recent year available, was 83% of the overfishing threshold. A benchmark assessment is scheduled for 2022. The spiny dogfish spawning stock biomass estimate timeseries is provided in Figure 1.²

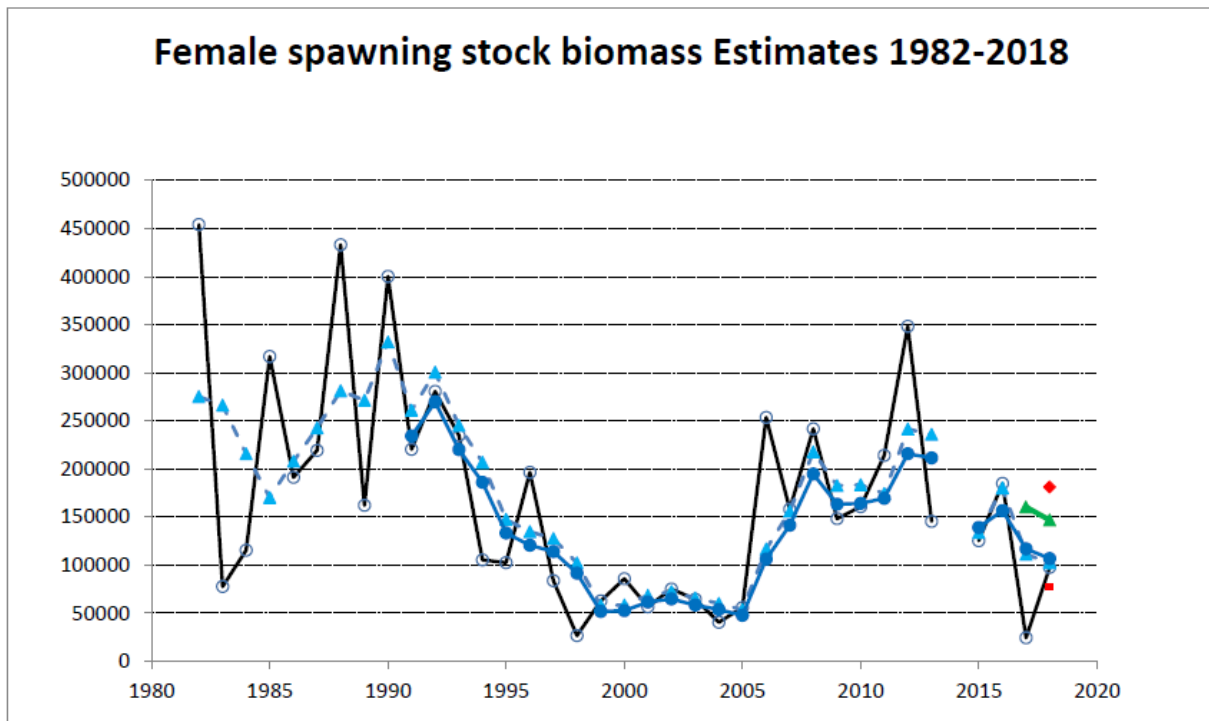


Figure 1. Stochastic SSB estimates for 1991 to 2018. Year refers to the terminal year in the three point moving average. The open circles are the yearly swept area SSB estimates, the blue triangles are the 3-year moving average of the swept area estimates, and the **closed blue circles are the stochastic SSB estimates**. The green triangles are the stochastic estimates not including 2017 and not adjusted with a Kalman filter, and the red diamond (no 2017) and square (with 2017) are the stochastic estimates adjusted with a Kalman filter (not used in last update).²

Management System and Fishery Performance

Management

The Council established management of spiny dogfish in 2000 and the management unit includes all federal East Coast waters.

Access to the fishery is not limited, but a federal permit must be obtained to fish in federal waters and there are various permit conditions (e.g. trip limit and reporting). There is a federal trip limit of 6,000 pounds. Some states mirror the federal trip limit, but states can set their own

trip limits. The annual quota has been allocated to state shares through the Atlantic States Marine Fisheries Commission (<http://www.asafc.org/species/spiny-dogfish>).

Spiny Dogfish three-year specifications were adopted by the Council in October 2018 for May 1, 2019 through April 30, 2022 (the 2019-2021 fishing years). Quotas for these fishing years are 20.5 million pounds (2019), 23.2 million pounds (2020), and 27.4 million pounds (2021). If projections are amended and accepted by the Scientific and Statistical Committee SSC just based on the Council's new risk policy, the 2021 quota could approximately increase by another 3 million pounds to around 30 million pounds.

Recreational landings are a minimal component of fishing mortality, and dead recreational discards comprise a relatively low portion of discard mortality.

Commercial Fishery

Figure 2 and Table 1 illustrate spiny dogfish landings for the 2000-2019 fishing years relative to the quotas in those years. Additional years' landings are available in the 2019 NMFS Science Center data update. The Advisory Panel has previously noted that the fishery is subject to strong market constraints given weak demand.

Figure 3 provides inflation-adjusted spiny dogfish ex-vessel prices in "real" 2019 dollars.

Figure 4 illustrates preliminary landings from the 2020 and 2019 fishing years relative to the current quota. The last 2020/blue data point is typically the most incomplete.

Tables 2-4 provide information on landings in the 2017-2019 fishing years by state, month, and gear type.

Table 5 provides information on the numbers of participating vessels that have at least one federal permit. State-only vessels are not included, but the table should still illustrate trends in participation.

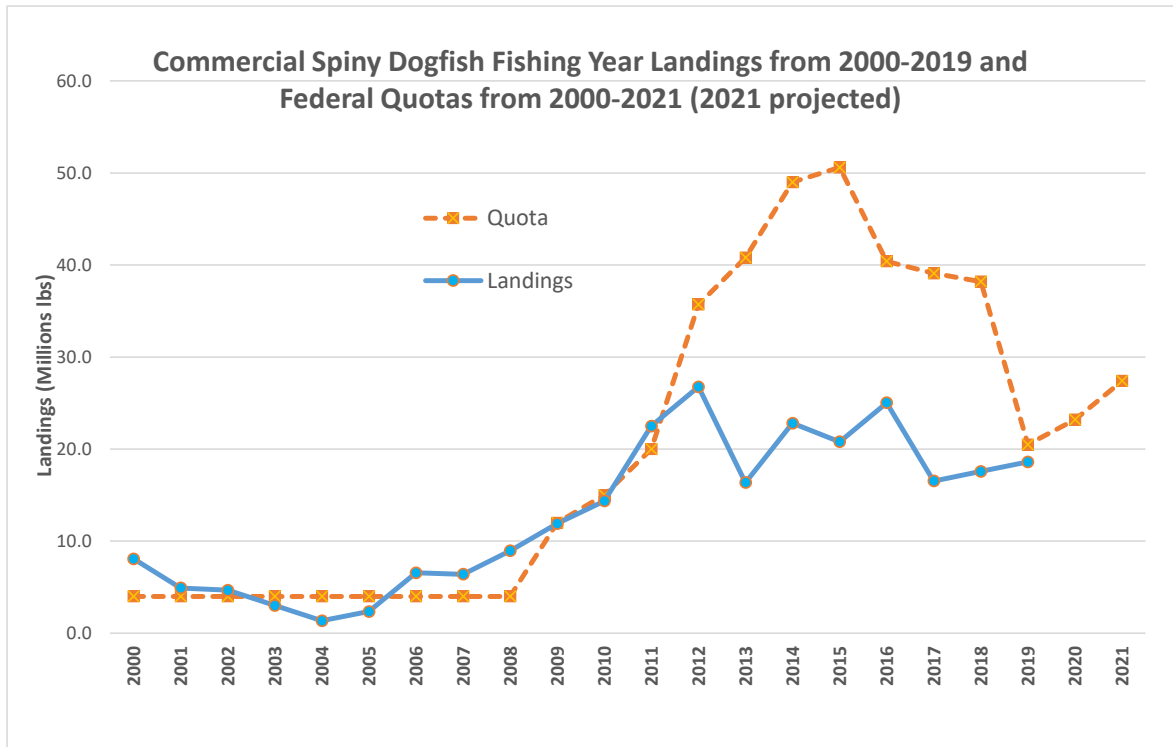


Figure 2. Annual spiny dogfish landings and federal quotas since 2000. ⁴

Table 1. Commercial spiny dogfish fishing year landings from 2000-2019 and federal quotas from 2000-2021 (2020-2021 Proposed)⁴

Fishing year	Fed Quota (M lb)	Landings (M lb)
2000	4.0	8.1
2001	4.0	4.9
2002	4.0	4.7
2003	4.0	3.0
2004	4.0	1.3
2005	4.0	2.3
2006	4.0	6.6
2007	4.0	6.4
2008	4.0	8.9
2009	12.0	11.9
2010	15.0	14.4
2011	20.0	22.5
2012	35.7	26.8
2013	40.8	16.4
2014	49.0	22.8
2015	50.6	20.8
2016	40.4	25.0
2017	39.1	16.5
2018	38.2	17.6
2019	20.5	18.6
2020	23.2	
2021	27.4	

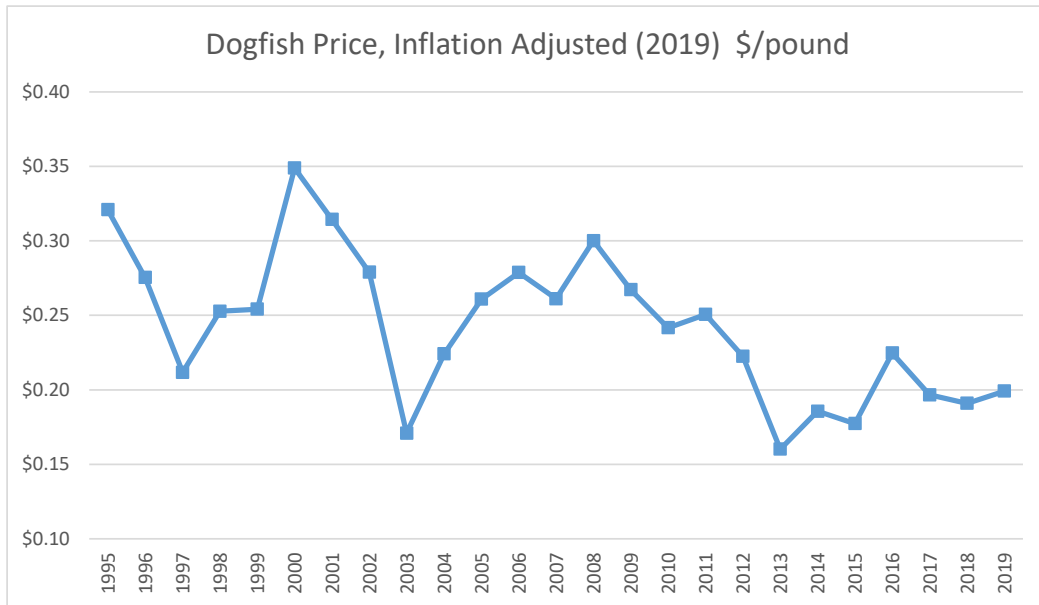


Figure 3. Price of spiny dogfish (\$/live pound) (adjusted to 2019 “real” dollars using the GDP deflator, 1995-2019 fishing years. Given the difference between fishing year and the calendar year used for inflation adjusting, adjusted prices are approximate. Source: NMFS unpublished dealer data.⁴

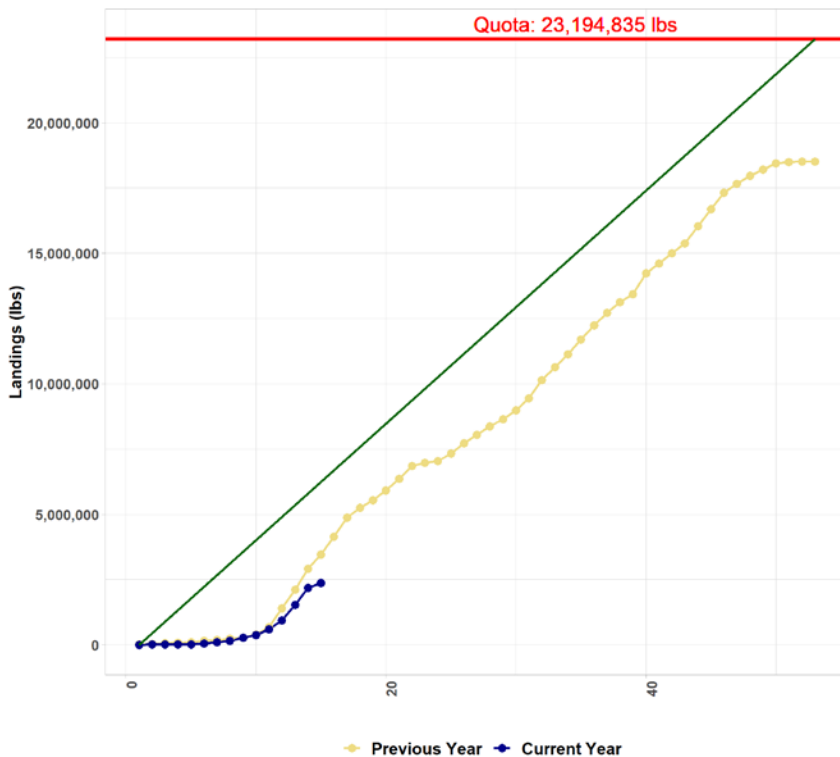


Figure 4. Preliminary Spiny dogfish landings; the 2020 fishing year is in blue through August 12, 2020, and the 2019 fishing year is in yellow-orange. Source: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region> .⁴

Table 2. Commercial Spiny Dogfish landings (live weight – millions of pounds) by state for 2017-2019 fishing years. Source: NMFS unpublished dealer data. ⁴

fishyear	MA	VA	NJ	NC	NH	MD	RI	Other	Total
2017	9.6	2.5	1.9	0.7	0.8	0.6	0.3	0.1	16.5
2018	7.7	5.5	1.3	1.4	0.5	0.9	0.2	0.1	17.6
2019	6.6	7.0	1.9	1.6	0.7	0.4	0.3	0.1	18.6

Table 3. Commercial Spiny Dogfish landings (live weight – millions of pounds) by month for 2017-2019 fishing years. Source: NMFS unpublished dealer data. ⁴

fishyear	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
2017	0.2	0.4	3.7	3.3	1.5	1.6	1.0	1.7	0.7	0.9	0.9	0.5	16.5
2018	0.0	0.1	2.3	2.7	1.8	1.5	1.3	2.5	1.6	1.8	1.2	0.8	17.6
2019	0.1	0.2	2.3	2.7	1.6	1.0	1.6	2.5	2.2	1.9	2.2	0.3	18.6

Table 4. Commercial Spiny Dogfish landings (live weight – millions of pounds) by gear for 2017-2019 fishing years. Source: NMFS unpublished dealer data. ⁴

fishyear	GILL_NET_SINK_OTHER	UNKNO WN	HAND_LINE_OTHER	GILL_NET_SET_STAKE_SEA_BASS	TRAWL_OTTER_BOTTOM_FISH	LONGLINE_BOTTOM	Other	Total
2017	8.7	4.1	1.9	0.7	0.8	0.0	0.3	16.5
2018	10.0	3.2	1.8	1.3	0.4	0.5	0.4	17.6
2019	11.8	2.7	0.5	1.5	0.5	1.3	0.3	18.6

Table 5. Participation by fishing year of federally-permitted vessels. State-only vessels are not included.⁴

YEAR	Vessels 200,000+	Vessels 100,000 - 199,999	Vessels 50,000 - 99,999	Vessels 10,000 - 49,999	Total with at least 10,000 pounds landings
2000	16	10	8	43	77
2001	4	12	10	33	59
2002	2	14	8	31	55
2003	4	5	3	17	29
2004	0	0	0	42	42
2005	0	0	1	67	68
2006	0	4	11	114	129
2007	1	2	21	72	96
2008	0	5	20	119	144
2009	0	11	42	166	219
2010	0	26	54	124	204
2011	1	48	73	135	257
2012	25	55	56	146	282
2013	10	27	45	87	169
2014	27	38	38	81	184
2015	31	33	36	59	159
2016	52	26	14	45	137
2017	28	27	24	32	111
2018	28	26	20	35	109
2019	29	25	21	29	104

Staff received a request about participation in May-July 2020 (i.e. most recent year to date) versus May-July 2019. GARFO staff was able to look at recent data, and noted the following. In 2020 so far through July, numbers of federal permits landing any spiny dogfish dropped from 90 to 64; numbers of federal permits landing at least 25,000 pounds dropped from 34 to 24; numbers of federal permits landing at least 50,000 pounds dropped from 24 to 18.

References

¹ Stehlik, Linda. 2007. Essential Fish Habitat source document: Spiny Dogfish, *Squalus acanthias*, Life History and Habitat Characteristics. NOAA Technical Memorandum NMFS-NE-203; 52 p.

² NEFSC 2018. Spiny Dogfish Assessment Update. Available at <http://www.mafmc.org/ssc-meetings/2018/sept-11>.

³ NEFSC 2019. Spiny Dogfish Data Update. Available at <http://www.mafmc.org/ssc-meetings/2019/september-9-11>.

⁴ Unpublished NMFS dealer and/or Vessel Trip Report data.