Atlantic States Marine Fisheries Commission

Spiny Dogfish Management Board

October 21, 2021
10:15 – 11:15 a.m.
Webinar

Draft Agenda

The times listed are approximate; the order in which these items will be taken is subject to change; other items may be added as necessary.

1. Welcome/Call to Order (*C. Batsavage*)	10:15 a.m.
2. Board Consent • Approval of Agenda • Approval of Proceedings from October 2020	10:15 a.m.
3. Public Comment	10:20 a.m.
4. Review Analysis on Trip Limit and Market Price (*J. Didden*)	10:30 a.m.
5. Consider Fishery Management Plan Review and State Compliance for the 2020 Fishing Year (*K. Rootes-Murdy*) **Action**	10:45 a.m.
6. Update on Research Track Assessment (*J. Didden*)	11:00 a.m.
7. Other Business/Adjourn	11:15 a.m.

The meeting will be held via webinar, click here for details.

MEETING OVERVIEW

Spiny Dogfish Management Board
October 21, 2021
10:15 - 11:15 a.m.
Webinar

Chair: Chris Batsavage (NC) Assumed Chairmanship: 10/19	Technical Committee Chair: Scott Newlin (DE)	Law Enforcement Committee Representative: Moran (NJ)
Vice-Chair: Nichola Meserve	Advisory Panel Chair: VACANT	Previous Board Meeting: October 2020
Voting Members: ME,NH, MA, RI, CT, NY, NJ, DE, MD, VA, NC, NMFS, USFWS (13 votes)		

2. Board Consent

- Approval of Agenda
- Approval of Proceedings from October 2020

Public Comment – At the beginning of the meeting public comment will be taken on items not on the agenda. Individuals that wish to speak at this time should use the webinar raise your hand function and the Board Chair will let you know when to speak. For agenda items that have already gone out for public hearing and/or have had a public comment period that has closed, the Board Chair may determine that additional public comment will not provide additional information. In this circumstance, the Board Chair will not allow additional public comment on an issue. For agenda items that the public has not had a chance to provide input, the Board Chair may allow limited opportunity for comment. The Board Chair has the discretion to limit the number of speakers and/or the length of each comment.

4. Review Analysis on Trip Limit and Market Price (10:30 - 10:45 a.m.)

Background

- The Board has previously considered changes to the commercial federal trip limit due to concerns that it was an additional constraint to the state and regional trip limits.
- In August, the Mid-Atlantic Fishery Management Council (Council) Advisory Panel met and requested that the federal trip limit be raised to allow for more vessels to participate and allow for higher landings. (**Briefing Materials**)
- In response, Council Staff conducted a price analysis (**Briefing Materials**) to evaluate the potential effect of federal trip limit changes on spiny dogfish ex-vessel prices.

Presentations

- Analysis on Trip Limit and Market Price by J. Didden

5. Fishery Management Plan Review (10:45 - 11:00 a.m.) Action

Background

- State compliance reports were due July 1, 2021
- The Plan Review Team reviewed each state report and compiled the annual FMP Review.
- New York and Delaware requested *de minimis* status

Presentations

- Overview of the Spiny Dogfish FMP Review by K. Rootes-Murdy (**Briefing Materials**)

Board Actions for Consideration

- Accept 2020 FMP Review and State Compliance Reports.
- Approve *de minimis* requests for New York and Delaware.

6. Update on Research Track Assessment (11:00 - 11:15 a.m.)

Background

- The Research Track Assessment Working Group was formed earlier this year and is continuing work on the assessment scheduled for peer review in summer 2022.

Presentations

- Update on Research Track Assessment by J. Didden

7. Other Business/Adjourn

Spiny Dogfish

Activity level: Low

Committee Overlap Score: low (some overlaps with Coastal Sharks)

Committee Task List
• TC – July 1st: Annual compliance reports due

TC Members: Scott Newlin (DE, TC Chair), Tobey Curtis (NOAA), Jason Didden (MAFMC),Lewis Gillingham (VA), Greg Skomal (MA), Mike Frisk (NY), Lee Paramore (NC), Conor McManus (RI), Greg Hinks (NJ), Angel Willey (MD), Matt Gates (CT), Kathy Sosebee (NOAA), Michael Frisk (NY), Matt Cieri (ME), Kirby Rootes-Murdy (ASMFC)

DRAFT PROCEEDINGS OF THE

ATLANTIC STATES MARINE FISHERIES COMMISSION

SPINY DOGFISH MANAGEMENT BOARD

Webinar
October 21, 2020

These minutes are draft and subject to approval by the Spiny Dogfish Management Board.
The Board will review the minutes during its next meeting.

Draft Proceedings of the Spiny Dogfish Management Board Webinar
October 2020

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ATTENDANCE

Board Members

Megan Ware, ME, proxy for P. Keliher (AA)
Cheri Patterson, NH (AA)
G. Ritchie White, NH (GA)
Dennis Abbott, NH, proxy for Sen. Watters (LA)
Nicola Meserve, MA, proxy for D. McKiernan (AA)
Raymond Kane, MA (GA)
Sarah Ferrara, MA, proxy for Rep. Peake (LA)
Jason McNamee, RI (AA)
David Borden, RI (GA)
Eric Reid, RI, proxy for Sen. Sosnowski (LA)
Rob LaFrance, CT, proxy for Bill Hyatt (GA)
Maureen Davidson, NY, proxy for J. Gilmore (AA)
John McMurray, NY, proxy for Sen. Kaminsky (LA)
Joe Cimino, NJ (AA)
Tom Fote, NJ (GA)
Adam Nowalsky, NJ, proxy for Asm. Houghtaling (LA)
John Clark, DE, proxy for D. Saveikis (AA)
Roy Miller, DE (GA)
Craig Pugh, DE, proxy for Rep. Carson (LA)
Mike Luisi, MD, proxy for B. Anderson (AA)
Russell Dize, MD (GA)
Phil Langley, MD, proxy for Del. Stein (LA)
Pat Geer, proxy for S. Bowman (AA)
Chris Batsavage, NC, proxy for S. Murphey (AA)
Jerry Mannen, NC (GA)
Derek Orner, NMFS
Mike Millard, USFWS

(AA = Administrative Appointee; GA = Governor Appointee; LA = Legislative Appointee)

Ex-Officio Members

Staff

Robert Beal
Toni Kerns
Kristen Anstead
Max Appelman
Pat Campfield
Maya Drzewicki
Jeff Kipp
Laura Leach
Savannah Lewis
Sarah Murray
Caitlin Starks
Deke Tompkins
Geoff White

Guests

Mike Armstrong, MA DMF
Pat Augustine, Coram, NY
Mel Bell, SC DNR
Alan Bianchi, NC DENR
Jason Boucher, DE DFW
Jeff Brust, NJ DEP
Kristin Butler, Fellow USS EPW
Mike Celestino, NJ DEP
Heather Corbett, NJ DEP
Jessica Daher, NJ DEP
Monty Deihl, Ocean Fleet
Andrea Didden
Jason Didden, MAFMC
Lynn Fegley, MD DNR
Jay Odell, TNC
Allison Ferreira, NOAA
Cynthia Ferrio, NOAA
Lewis Gillingham, VMRC
Angela Giuliano, MD DNR
Sonny Gwinn
Matthew Heyl, NJ DEP
Carol Hoffman, NYS DEC
Bill Hyatt, CT (AA)
Shanna Madsen, VMRC
Dan McKiernan, MA (AA)
Kim McKown, NYS DEC
Brandon Muffley, MAMFC
Allison Murphy, NOAA
Brian Neilan, NJ DEP
Ken Neill
Rich Pendleton, NYS DEC
Michael Pierdinock, CPF Charters
Brandon Raguz, NOAA
Jill Ramsey, VMRC
Tim Sartwell, NOAA
Tara Scott, NOAA
McLean Seward, NC DENR
Helen T-Heumacher, EDF
Beth Versak, MD DNR
John Whiteside
Angel Wiley, MD DNR
Chris Wright, NOAA
Renee Zobel, SC DNR

The Spiny Dogfish Management Board of the Atlantic States Marine Fisheries Commission convened via webinar; Wednesday, October 21, 2020, and was called to order at 11:30 a.m. by Chair Chris Batsavage.

CALL TO ORDER

CHAIR CHRIS BATSAVAGE: Good morning everyone, I would like to welcome you to the Spiny Dogfish Management Board meeting. My name is Chris Batsavage; I am the Administrative Proxy from North Carolina, and will be serving as Chair.

APPROVAL OF AGENDA

CHAIR BATSAVAGE: I want to start with Approval of the Agenda. Are there any modifications or additions requested for the agenda?

MS. TONI KERNS: I don't see any hands, Chris.

CHAIR BATSAVAGE: Okay great, we'll consider that approved.

APPROVAL OF PROCEEDINGS

CHAIR BATSAVAGE: Next is Approval of the Proceedings from the October 2019 Board meeting. Are there any changes, modifications, et cetera to the proceedings?

MS. KERNS: I see no hands.

CHAIR BATSAVAGE: All right, then those are approved.

PUBLIC COMMENT

CHAIR BATSAVAGE: Next is Public Comment. I'll offer the public the opportunity to provide comments on any items that are not on today's agenda. Are there any members of the public that would like to provide comment at this time?

MS. KERNS: I'm going to give an extra second. I see no hands.

CHAIR BATSAVAGE: All right, good deal. Okay moving along.

CONSIDER THE REVISED SPECIFICATIONS FOR THE 2021 AND 2022 FISHING SEASONS

CHAIR BATSAVAGE: Next item is to Consider the Revised Specifications for the 2021 and 2022 Fishing Seasons. Today we have Jason Didden from the Mid-Atlantic Fisheries Management Council that is going to go over the information on this with the Board. Jason, whenever you're ready, it's all yours.

MR. JASON T. DIDDEN: Okay thanks. Again, so looking at 2021 and 2022 fishing years here. We're currently in multiyear specs for '19, '20, and '21 fishing years. They were expected to go up a bit over those three years, because of the projections in the assessment just have the stock trend up.

Originally it was estimated to be at 67 percent of the target in 2018 with the last assessment, and then as the stock floats up with the projections, so does the ABC. That was the original recommendation from our SSC. The Council has modified its risk policy to tolerate a slightly higher chance of overfishing at any given stock size. The original chances of overfishing were like 27 to 30 percent in these multiyear specs. With the modification to the risk policy it allows, at the projected stock size, a 33 percent chance of overfishing.

That bumps up the projected 2021 ABC to 17,498 metric tons, and since we're expecting a benchmark in 2022, that probably really won't work into the specs process until the 2023 fishing year. Staff recommended just maintaining that same ABC for 2021 and 2022. Just from last year's update, the assessment is not just the spring trawl survey, but it is it with some bells and whistles.

These are SSB estimates coming out of the spring trawl fishery that really drives the bus on the assessment. There was no 2020 spring trawl because of COVID, but just kind of reviewing this to get a sense. It's really the terminal three years of data that kind of drive the assessment. This is not an assessment update. These are SSB point estimates from the survey, but you can kind of get a sense of the trends we saw, management starting in 2000.

The results from the spring trawl survey jumping up in a way that really doesn't match the biology of the species initially, right after management started, and then dropping off in recent years. Just landings since management, landings kind of tracked the increases in the quotas through 2011, and then since then the quotas went up a big with projections, landing basically kind of we're oscillating around that 20-million-pound mark.

With the last assessment update estimating smaller stock size, again you saw the trend in the survey. The quotas came back down. The annual landings have still been below quotas. The states have been kind of scrambling with some transfers to kind of optimize landings, given the state allocations.

You can see the 2019 fishing year there getting pretty close to the associated quota, and then the quotas popping back up. This 2021 is the original quota as would occur under the current multiyear specs. Just in terms of how landings have occurred the last few years. Blue here is the 2019 fishing year, the orange the year before, just to kind of get a sense how landings have come in week to week.

On the left is May 1, proceeding through the fishing year to late April of the following calendar year for again, 2019 here in blue, 2018 in orange. This is the same basic thing, but here blue is the current fishing year, orange the previous fishing year, so tracking a little bit behind 2019 fishing year this year, but pretty similar, all things considered, at least from my perspective. Just the price of spiny dogfish. This is inflation adjusted, everything in kind of constant real 2019 dollars.

The long-term trend is down. The last three years have been pretty stable though. With our process, first let me get some input from the Advisory Panel. They kind of flagged continuing weak demand, and that that weak demand coupled with the trip limit restrains landings flagged that local conditions affect local landings. That especially kind of has come up, and Virginia has had some pretty mild winters, and some pretty good winter landings in recent years. There remains concern that we've had some new science, in terms of vertical distribution in the water column, in terms of distribution in and out of the survey area. What does that mean for an assessment that is so driven by the survey? There is a lot of concern, are we underestimating the population and productivity?

Hope that that gets evaluated in the upcoming research track assessment, but no concerns about the stock from the AP. We did get input, especially this year that, given the executive order, things should really be opened up with spiny dogfish to facilitate additional landings. I got some input early this current fishing year being a little bit lower than last year, some fewer northern participants.

The fish seemed offshore, and folks having trouble kind of landing full trip limits. But big picture wise, landings seem to be tracking fairly closely to the year before so far in this fishing year. Again, the staff recommendation was the updated ABC, given the new risk policy, and extend it through 2022 as well. Next to our SSC, and then the SSC accepted that recommendation as being consistent with the Council's updated risk policy. There is certainly concern about not having that spring survey.

We're getting a big distant in time from when these projections were done in the last stock assessment, so that increases some uncertainty. But they noted that if you just went with the original projections done several years ago, even the original ones, the old risk policy had a bit higher ABC for 2022. There is a little bit of kind of conservatism, precaution built in through extending 2022 at the 2021 level, even the higher 2021 level with the new risk policy.

The SSC also highlighted and updated some research recommendations, given the pending research track assessment. The Monitoring Committee took those ABC recommendations, recommending some deductions for Canadian landings, for U.S. discards, for U.S. recreational landings. Those you can see, some of those are most recent year, some of the discards are three-year average, the calculation of those and what to take out for those came out of some correlation analyses that we've done in previous years.

Also, they seem to be performing fairly well. When you get to taking out the Canadian landings, discards, recreational landings, the revised 2021 and potentially 2022 quotas would be 13,408 metric tons, or just shy of 30 million pounds, which is higher than it was originally intended to be, and of course given the trends, higher than they are now.

There is always some discussion of trip limits at the Monitoring Committee. The Monitoring Committee has generally stayed away from a kind of heavy input on the trip limit, since from a biological perspective, as long as the states are adhering to their quotas, the trip limit shouldn't matter that much from a biological perspective.

The Monitoring Committee has kind of noted process considerations that within the Council FMPs major changes should really be handled via a framework, like getting rid of the trip limits. Both in terms of what's allowable vs specs, vs a framework. Then frameworks, since the topics are clearly identified under these two Council meetings for the Councils, really allows greater public input, greater awareness if there are potential changes, and greater just time for analysis also. Some follow up discussions with GARFO noted that some minor changes could probably be handled with low administrative costs. Council really wasn't intending on any action this year for spiny dogfish, but because of the way the previous NEPA document was structured, we can handle the quota change with pretty minor administrative cost.

But bigger changes beyond a couple thousand-pound increase would need an EA that really have not planned for resources for this year, but could probably deal with a thousand or two thousand pound increase within the current NEPA document structure in the abbreviated document we're planning.

However, Council staff still recommended to the Mid-Atlantic Council that really, use a framework to consider trip limit changes, because I don't really think participants are expecting trip limit changes right now, since we're in the middle of multiyear specs. We've gotten a lot of input over the years about given the relatively low price of spiny dogfish, changes to the trip limit potentially change price, so potentially fishermen are hauling more fish for the same revenue.

Because of a number of considerations, staff kind of really recommends using a framework to consider trip limit changes, so that folks can kind of be made aware of potential changes, and allow some additional socio-economic analysis of what trip limit changes might result in. The New England Council has voiced some concerns that New England preferences have been kind of masked by the Council's Committee as a Whole approach.

The Mid-Atlantic Council did that just to try for some kind of administrative savings. I think

probably in the future we'll likely just have separate committee meetings, so that kind of to address this concern. If the Committees are fairly balanced between Mid-Atlantic and New England members right now, but since we had it as a Committee of the Whole Mid-Atlantic Council, and all of our members vote as a Committee of the Whole.

If there are New England preferences, and its roughly split at the Committee level, that can get kind of masked. If all the Mid-Atlantic Council members are voting at Committee of the Whole, which is how we handle it, I anticipate in future years we'll just hold the Committee meetings separately.

The Mid-Atlantic Council did adopt the Monitoring Committee changes with no trip limits. It has set up as a 2021 priority in response to the Executive Order, some socio-economic analyses of what some potential trip limit changes could mean, and that could inform future action. New England Council meets in December.

If the two Councils recommend different things, basically the way the plan is set up that NMFS can resolve any differences by selecting any modification that hasn't been rejected by both Councils. Last year the Councils were aligned with each other, but if there is a disagreement between the Councils, GARFO/NMFS has a lot of flexibility to resolve those differences. That is it for me, thanks.

CHAIR BATSAVAGE: Thank you, Jason. Any questions for Jason on his presentation?

MS. KERNS: We have Jason McNamee and Eric Reid, and then Chris, I can just really quickly remind the Board that the Board has set the 2021, 2022 specifications. If we want to change the specification to mirror what the Mid-Atlantic Council has done to the 29.6 million pounds, we would need to revisit that quota, and determine if we want to set a quota for the 2022, 2023 fishing year.

CHAIR BATSAVAGE: Thanks, I appreciate that. Jason McNamee, you're up.

DR. JASON McNAMEE: Thank you, Jason for the report that was very, very well done. I have a question on the Monitoring Committee portion with regards to the trip limit. My question is, I was wondering, so there was a bullet in there where you indicate that it doesn't appear that the 6,000-pound trip limit is impacting things, because a lot of the trips aren't coming close to that, they are underneath it. That was what I took away from that part of the discussion anyways.

What I was wondering is, if the Monitoring Committee discussed at all kind of the indirect impact of where the trip limit is set. In other words, the fact that it's at 6,000 might have some potential participants who might want to come in with dogfish. It might not be enough for them, given the low price per pound, so if they're just discarding everything. I'm just wondering if that was brought up, because I'm wondering if that statement that I just made is true or not.

MR. DIDDEN: The Monitoring Committee's charge is to recommend measures to ensure that the specifications are not exceeded. Our input on the trip limit, not needing to change it, is more along the lines that we think if it's left where it is odds are the specs will not be exceeded. But I didn't look at it specifically this year, but in other years I've looked at it. Actually, there are many trips right at the 6,000-pound trip limit, and very close to it.

I think that does impact landings, both for the existing participants who are often landing right at 6,000 pounds, and other potential participants. I know, and we've gotten some input for some trawling interest, maybe like even a couple times a month to have like a

30,000-pound trip limit that they can make a trip out of. The Monitoring Committee is really more, in terms of not needing a change, more that if it's left as is, we don't think the specs will be exceeded.

But certainly, and with the state-by-state quotas, we think that changes to that probably aren't going to lead to overages either, as long as states adhere to their quotas. But I think it is impacting the nature of landings in a pretty strong way, because when I do like a scatter plot of all the trips, there are, I'm not quite sure about a majority, but it is really striking how many trips are right at 6,000 pounds.

DR. McNAMEE: Thank you very much, that was super helpful.

CHAIR BATSAVAGE: Next up is Eric Reid.

MR. ERIC REID: I have a question about process. I do have a motion, but it might need to be two motions. A motion to revise requires two-thirds vote, but a simple motion to set specs is only a majority, is that right, or is one motion going to be able to do the whole thing?

CHAIR BATSAVAGE: Eric, yes, I believe you're right. I'll turn to Toni to see if we could potentially handle both years in one motion. Toni.

MS. KERNS: It's the will of the Board. You are correct, Eric, it does take two-thirds majority to revise. But if we don't think that there is going to be much opposition to revising and setting the specs at the 29.6 million pounds, we can do it all in one.

MR. REID: Okay, thanks for that. Mr. Chairman, I can give you a motion whenever you're ready and see what happens.

CHAIR BATSAVAGE: I'm going to see if any other Board members have questions, and if not, I'll come back to you for your motion. Toni, anyone else in the queue?

MS. KERNS: I see no one else with their hand raised. I apologize, David Borden just snuck in.

CHAIR BATSAVAGE: Great, David.

MR. DAVID V. BORDEN: Just a quick question. Is the observation by the Advisors about the dogfish resource moving into federal waters? I just wondered to what extent is that supported by the science?

CHAIR BATSAVAGE: I think I'll turn to Jason Didden on any insight he has on that.

MR. DIDDEN: That was kind of an on-the-fly observation of really 2020 fishing year landings. I have, and I think particular to 2020, and there is a reason why landings may have slacked, may have been a little bit below last year's trend. I have not looked into that in any detail. Without the spring survey, you know that would further compromise our kind of ability to see changes.

We don't really have much, in terms of distribution in the summer when that was occurring. I think it would be pretty hard to delve into, but I haven't, since it's really just summer 2020 that their observation was mostly pertinent to. I haven't kind of been able to dig through any data on that.

MR. BORDEN: Thank you, Jason. Mr. Chairman, can I follow up with a question?

CHAIR BATSAVAGE: Yes, definitely.

MR. BORDEN: My follow up is, to what extent has the Mid-Atlantic Council talked about the subject of the surveys being modified, and the observer system being modified? Have they taken that up and had a discussion on how that might affect out-year specifications?

MR. DIDDEN: Our Assister has certainly been chewing on that quite a bit. I don't know. I would have to follow up on any resolution. I think if, you know we've had some gap years with spiny dogfish before, with missing the 2020. But it's hard to say exactly which way the research track proceeds, and what data sources it uses. But I can only imagine that it will increase uncertainty, and that's never a good thing.

MR. BORDEN: Thank you.

CHAIR BATSAVAGE: Any other questions from Board members?

MS. KERNS: No other hands.

CHAIR BATSAVAGE: Okay great, so Eric, I will turn to you for your motion.

MR. REID: If somebody wants to put it on the screen, I'm happy to read it. Move to revise the 2021/2022 fishing year spiny dogfish commercial quota to 29,559,580 pounds, and to set the 2022/2023 fishing year quota at 29,559,580 pounds. The rationale for that motion was given very clearly by Mr. Didden in his presentation.

MS. KERNS: We have a second by Ray Kane.

CHAIR BATSAVAGE: Thanks, so motion by Eric Reid, second by Ray Kane. Any discussion on the motion?

MS. KERNS: I don't see any hands raised.

CHAIR BATSAVAGE: This is a final action by the Board, which is roll call, but I think we can try to see if there are any objections, am I correct on that, Toni?

MS. KERNS: You can.

CHAIR BATSAVAGE: All right, in the interest of time and lunch creeping up on us here. I'll ask, are there any objections to this motion?

MS. KERNS: I see no hands in objection.

CHAIR BATSAVAGE: Okay then the motion passes by unanimous consent. I guess Toni, does that take care of what we need to do for specifications? I guess if there is no interest in modifying the northern region trip limits, then they would stay at 6,000 pounds, and no action would be needed by the Board. Am I correct on that?

MS. KERNS: That is correct, Mr. Chairman.

CHAIR BATSAVAGE: Okay, if there is no interest in making any modifications to that, and as Jason mentioned that there is going to be some more work done on analyzing that next year. Then we can move on to our next item on the agenda. I'll just pause to make sure that that is the case.

MS. KERNS: I don't see any hands, so I think you are correct.

CHAIR BATSAVAGE: Thank you again everyone for getting through this action item.

ELECT A VICE-CHAIR

CHAIR BATSAVAGE: Next item on the agenda is to Elect a Vice-Chair. Now I'll entertain a motion for a Vice-chair.

MS. KERNS: You have Nichola Meserve, I mean sorry, Megan Ware. I might have made a spoiler.

MS. MEGAN WARE: I would like to nominate Nichola Meserve.

CHAIR BATSAVAGE: Move to nominate Nichola Meserve as Vice-Chair of the Spiny Dogfish Board, can I get a second, please?

MS. KERNS: Cheri Patterson.

CHAIR BATSAVAGE: Seconded by Cheri Patterson. Is there any objection to the motion?

MS. KERNS: I see no hands in objection.

CHAIR BATSAVAGE: All right, great, congratulations and thank you, Nichola. Last item is other business. Is there any other business for the Management Board to consider today?

MS. KERNS: I see no hands raised for other business.

ADJOURNMENT

CHAIR BATSAVAGE: Great, well if there is no objection than we are adjourned. Thanks everyone.

(Whereupon the meeting adjourned at 12:00 p.m. on October 21, 2020.)

Spiny Dogfish
AP Fishery Performance Report
August 2021

The Mid-Atlantic Fishery Management Council's (Council) Spiny Dogfish Advisory Panel (AP) met via webinar on August 19, 2021 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: Scott MacDonald, John Whiteside, Jr., Jeremy Hancher, James Fletcher, Scott Curatolo-Wagemann, and Roger Rulifson. **Others attending:** Jason Didden, Daniel Salerno, Chris Batsavage, Alan Bianchi, Angel Willey, Willow Patten, John Almeida, Kirby Rootes-Murdy, Sonny Gwin, and Stephanie Sykes.

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 – market could support more landings than in most recent year if participation/production at the vessel level increases.

Changing the name to Chip Fish would help with marketing/exports. We could sell these in the U.S. if we could change the name (like snakehead). No advisors were opposed but practical challenges were highlighted.

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. Southern fishermen have to ship to MA.

Previous reports have noted not having a processor also depresses NY landings.

Developing industrial markets, be it fertilizer, processed export, or pharmaceutical (livers), requires a higher trip limit for trawlers.

Expanding use of liver components could increase overall value – several outreach efforts have occurred to pharmaceutical companies with no interest expressed back.

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).

General reasons for reduced participation: Increased fuel costs and opportunities in other fisheries.

In VA, fishermen have calculated that other fisheries (oysters, shrimp) are better opportunities and have reduced spiny dogfish effort. Shrimping drew off 8 boats last year.

The lowering of the quota from 38 million to 20 million had a negative impact on landings – would have been better to have taken an averaged approach.

Cornell has continued efforts to expand domestic consumption of spiny dogfish and other "exotic" species. E.g. chefs sampler events, underserved communities/foodbanks.

Public: Stephanie Sykes - One MA buyer had stipulations around having to land both skate and dogfish for a portion of the season, so if fishermen were unable to land both species they were forced to take days off or find another buyer.

Environmental Conditions

Environmental conditions are always a factor.

Public: Stephanie Sykes – Early in summer 2021 Cape Cod fishermen had trouble finding dogfish and switched over to other fisheries (hook/tub-trawl and gillnet). Dogfish came inshore and some shifted to dogfish with steady landings. When buyers stopped buying mackerel more shifted back to dogfish. Catches really dropped in mid-August, seem to be improving currently. Water temperatures are particularly warm – dogfish are not coming up cold currently.

In VA weather (late January through March 2021) further reduced catches for remaining vessels.

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.

Raising the trip limit to 10,000 pounds could entice more vessels to participate and allow higher landings once dogfish are located. Vessels won't immediately all land 10,000 pounds but helps with flexibility.

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. See Carlson AE, Hoffmayer ER, Tribuzio CA, Sulikowski

JA (2014) The Use of Satellite Tags to Redefine Movement Patterns of Spiny Dogfish (Squalus acanthias) along the U.S. East Coast: Implications for Fisheries Management. PLoS ONE 9(7): e103384. https://doi.org/10.1371/journal.pone.0103384. The general biological section of the fishery information document should be updated accordingly. Also see Garry Wright's thesis that concluded that the NEFSC trawl survey is not accurately representing spiny dogfish biomass.

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

You should note the continual nature of embryo development/pupping in the general biological information section.

The repeated failure of the Bigelow since 2014 to complete its mission in terms of not fishing at a consistent time and not achieving planned stations eliminates our ability to have good information about spiny dogfish abundance given the dependence on the survey for spiny dogfish. This compounds uncertainty concerns and the Bigelow performance degrades the credibility of the resulting information (individual years and interpreting the time series). We have 1/8 years of full surveys in recent years. This affects all species' management. The Council should call in NEFSC maritime operations manager (D. Simon?) to account for Bigelow performance. The advisors agreed that the Bigelow performance issues are doing a disservice to all the fisheries and fishermen.

There is concern whether the NEFSC is continuing wire/net measurements to ensure survey consistency. The timing of the survey is critical for spiny dogfish due to the observed migration patterns and not sampling the same areas consistently reduces the meaningfulness of the resulting data.

Condition of NC inlets makes it very difficult to get product into NC. NC trawl fishermen can't land spiny dogfish in VA due to state regulations.

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?

Off the shelf sampling needs to occur to understand biomass. Why can't Bigelow do some deeper sampling? Could we send a drone to monitor?

East Carolina Univ has tagged 43,000 + spiny dogfish – trying to get graduate student to publish. Appears to be an availability gap from years 2-8/10 where if not caught in first few years fish are not caught for a number of years but then eventually show back up in commercial catches.

Spiny Dogfish Fishery Information Document

August 2021

This Fishery Information Document provides a 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

- 2020 fishing year landings were about 12.8 million pounds; 2019 fishing year landings were about 19.1 million pounds.
- The current 2021 fishing year quota is 29.6 million pounds.
- The 2022 fishing year quota is planned to stay the same if no changes are recommended by the Scientific and Statistical Committee (SSC) or the Councils.
- A formal update from the NMFS Science Center is not anticipated, but we expect an update of the spring trawl survey results and pup index through 2021. 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 research track assessment has begun and is scheduled for review in 2022. The spiny dogfish spawning stock biomass estimate timeseries is provided in Figure 1. [2] Updated trawl data, which is the chief determinant of biomass in the assessment, will be distributed when available.

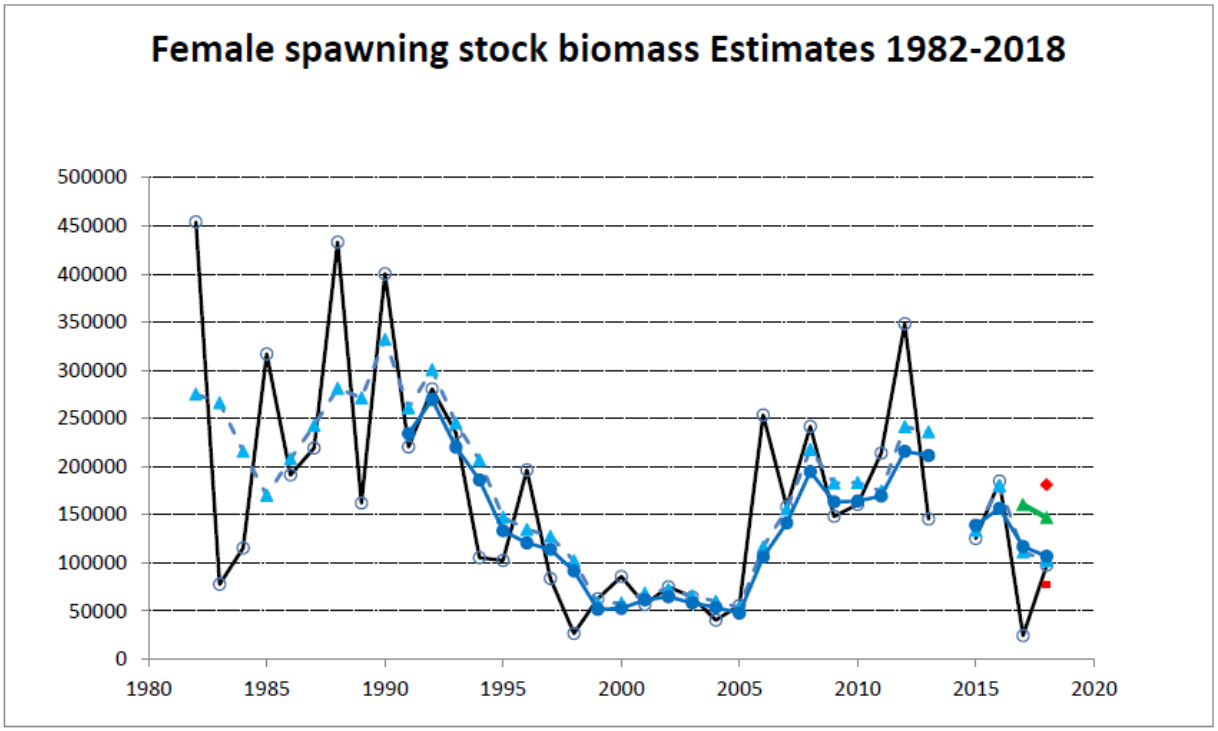


Figure 1. Stochastic SSB estimates for 1991 to 2018. Year refers to the terminal year in the three point moving average. The open circles are the yearly swept area SSB estimates, the blue triangles are the 3-year moving average of the swept area estimates, and the **closed blue circles are the stochastic 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.asmfc.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 were adjusted to the current 29.6 million pounds for the 2021 fishing year after an adjustment to the Council's risk policy and are planned to remain there since a 2022 research track assessment should be able to project catches for specifications starting with the 2023 fishing year.

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 2000-2020 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 2021 and 2020 fishing years relative to the current quota. The last 2021/blue data point is typically the most incomplete.

Tables 2-4 provide information on landings in the 2018-2020 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.

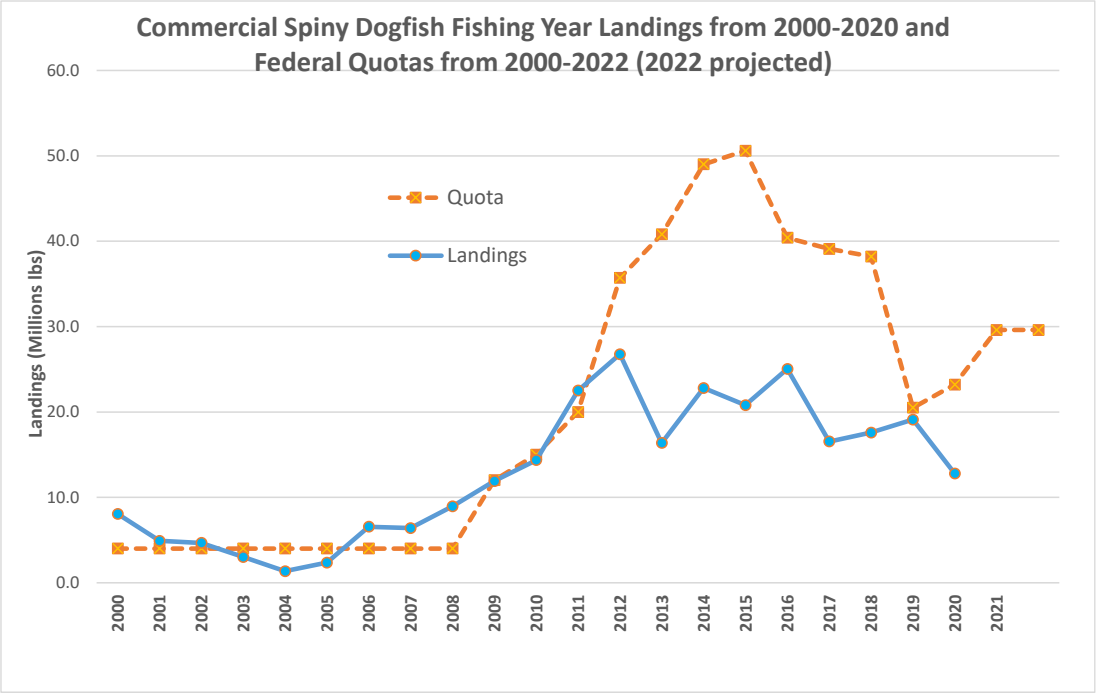


Figure 2. Annual spiny dogfish landings and federal quotas since 2000. [4]

Table 1. Commercial spiny dogfish fishing year landings from 2000-2020 and federal quotas from 2000-2022 (2022 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	19.1
2020	23.2	12.8
2021	29.6	
2022	29.6	

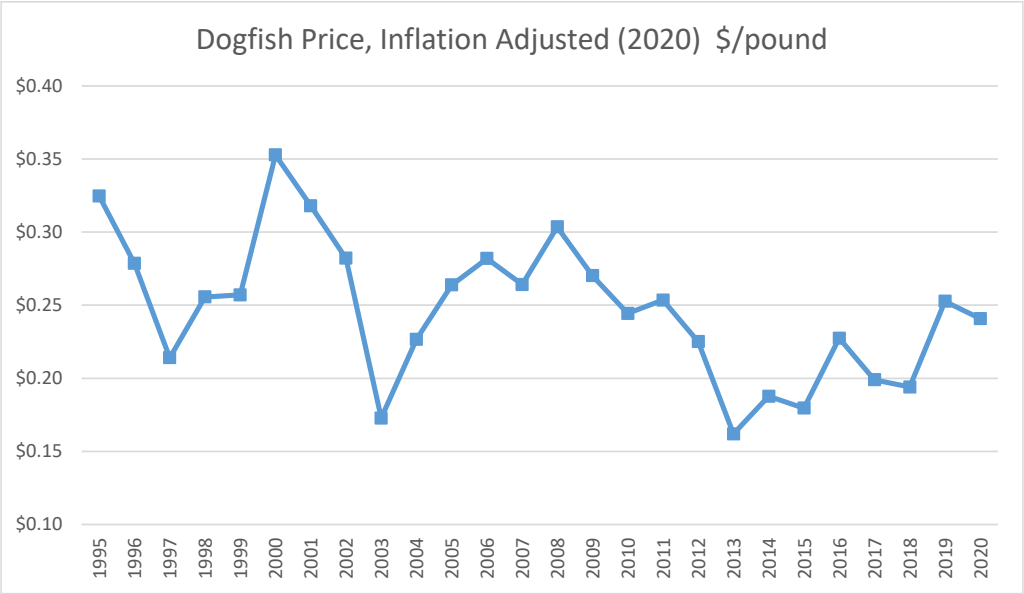


Figure 3. Price of spiny dogfish ($/live pound) (adjusted to 2020 "real" dollars using the GDP deflator, 1995-2020 fishing years. Given the difference between fishing year and the calendar year used for inflation adjusting, adjusted prices are approximate. Source: NMFS unpublished dealer data. [4]

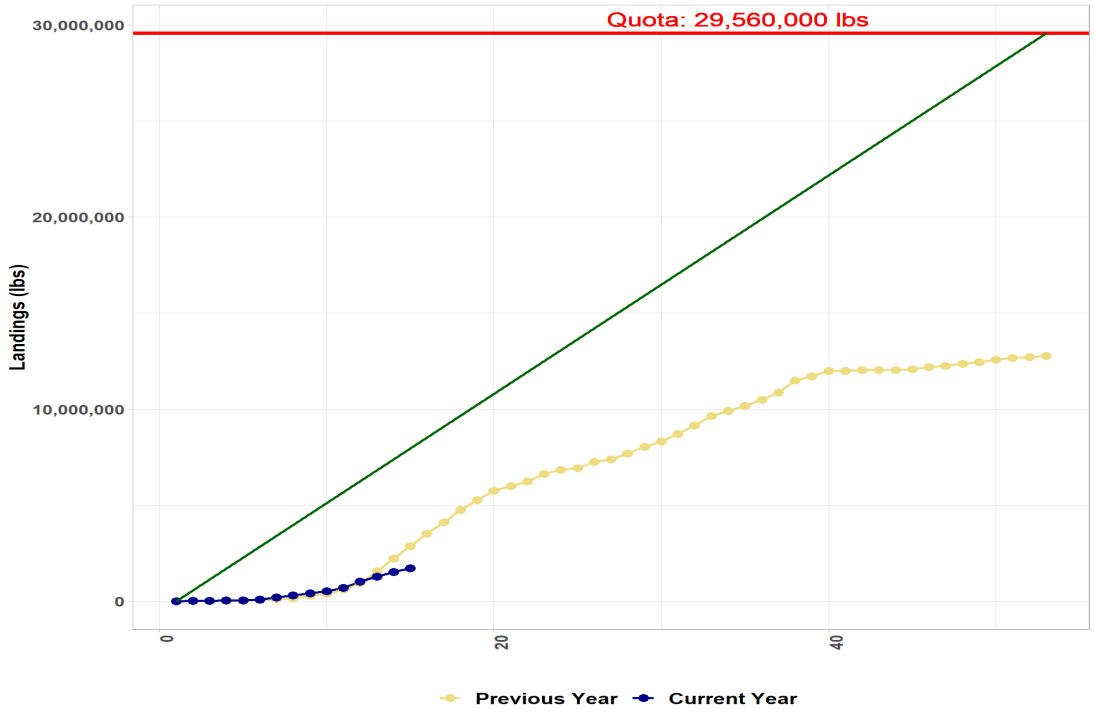


Figure 4. Preliminary Spiny dogfish landings; the 2021 fishing year (Starts May 1) is in blue through August 11, 2021, and the 2020 fishing year is in yellow-orange. Source: https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region . [4]

Table 2. Commercial Spiny Dogfish landings (live weight – millions of pounds) by state for 2018-2020 fishing years. Source: NMFS unpublished dealer data. [4]

fishyear	MA	VA	NJ	Other (NC,NH, MD, RI,CT, NY)	Total
2018	7.7	5.6	1.3	3.0	17.6
2019	6.6	7.4	1.9	3.1	19.1
2020	6.6	2.9	1.9	1.4	12.8

Table 3. Commercial Spiny Dogfish landings (live weight – millions of pounds) by month for 2018-2020 fishing years. Source: NMFS unpublished dealer data. [4]

fishyear	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	Total
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	2.6	2.3	1.9	2.4	0.4	19.1
2020	0.0	0.3	1.8	2.8	1.5	0.9	1.4	1.6	1.6	0.0	0.4	0.3	12.8

Table 4. Commercial Spiny Dogfish landings (live weight – millions of pounds) by gear for 2018-2020 fishing years. Source: NMFS unpublished dealer data. [4]

fishyear	GILL_NET_SINK__OTHER	UNKNOWN	LONGLINE__BOTTOM	GILL_NET_SET__STAKE__SEA_BASS	HAND_LINE__OTHER	TRAWL_OTTER_BOTTOM_FISH	Other	Total
2018	10.2	2.9	0.5	1.3	1.8	0.4	0.4	17.6
2019	12.1	3.0	1.3	1.5	0.5	0.5	0.3	19.1
2020	9.0	1.2	2.0	0.1	0.0	0.4	0.0	12.8

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
2020	23	27	15	22	87

Staff received a request about participation in May-August 11, 2021 (i.e. most recent year to date). While very preliminary, no federally-permitted vessels had yet landed over 200,000 pounds and only 22 had landed over 10,000 pounds.

Trip Limits and Prices

To consider the potential effect of federal trip limit changes on spiny dogfish ex-vessel prices, staff examined the most recent two federal trip limit changes, which occurred on September 8, 2014 (4,000 pounds to 5,000 pounds and August 15, 2016 (5,000 pounds to 6,000 pounds). The May 1, 2013 trip limit change (3,000 pounds to 4,000 pounds) occurred during a time of the year when weekly landings are low, making analysis across the trip limit change date problematic. Trip limit changes further back in time may be less reflective of current conditions.

Staff first noted that looking at annual prices (Figure 3), there did not seem to be negative changes in the relevant fishing years. The changes took place about one-third into the fishing year (begins May 1) so were in effect for about two-thirds of each respective fishing year. Compared to the prior year, annual average price increased in both 2014 (vs 2013) and 2016 (vs 2015). While average price fell in each subsequent year (the first full year after the trip limit change), the subsequent full year's average price was still above the prior full year's average price in both instances (i.e. 2015 vs 2013 and 2017 vs 2015).

Staff then reviewed landings data from the four weeks preceding and following the two respective trip limit changes. In both instances, vessels began using the higher trip limit after the change, but not all trips landed at or near the trip limit. In neither case did there appear to be a negative effect on prices. Staff examined these relatively small time periods in an effort to isolate the effect of the trip limit change from other potential external effects on supply and demand that could affect prices paid to vessels.

In 2014, in the four weeks before the change (September 8, 2014), 2.6 million pounds of spiny dogfish were landed at an average price of $0.21. In the four weeks after the change, 2.2 million pounds were landed at an average price of $0.22.

In 2016, in the four weeks before the change (August 15, 2016), 4.2 million pounds of spiny dogfish were landed at an average price of $0.23. In the four weeks after the change, 3.8 million pounds were landed at an average price of $0.25.

Staff also reviewed 2018-2020 data for trips over 10,000 pounds, which all occurred in North Carolina. Prices for these trips (about 120 and averaging 12,800 pounds) averaged $0.12 per pound, well below the average prices in those years. However differences in shipping costs make it difficult to determine if trip size is a factor in the differences in ex-vessel prices. By comparison, landings from those years between 5,000 pounds and 6,000 pounds averaged $0.17 per pound in Virginia and $0.22 per pound in Massachusetts.

In general, a review of fishery performance bridging the last two trip limit increases does not raise concern to staff that a relatively small, incremental trip limit change would substantially affect ex-vessel prices. However, data are not available to examine larger changes and any proposal for a large increase in trip limits should be considered cautiously.

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.

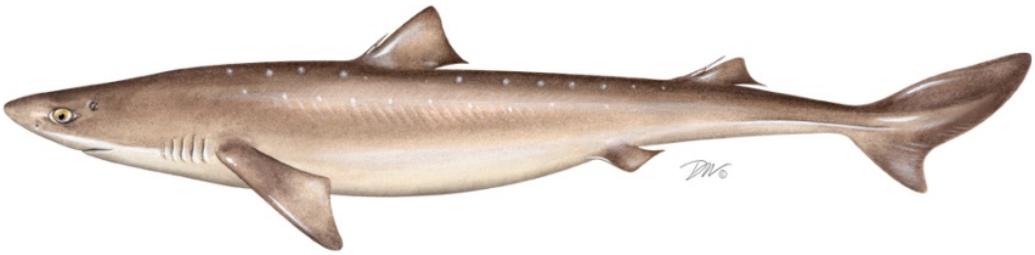
[4] Unpublished NMFS dealer and/or Vessel Trip Report data.

ATLANTIC STATES MARINE FISHERIES COMMISSION

REVIEW OF THE INTERSTATE FISHERY MANAGEMENT PLAN

FOR SPINY DOGFISH
(*Squalus acanthias)*

2020/2021 FISHING YEAR



Prepared by the Plan Review Team

For Board Review

Sustainable and Cooperative Management of Atlantic Coastal Fisheries

REVIEW OF THE ASMFC FISHERY MANAGEMENT PLAN AND STATE COMPLIANCE FOR SPINY DOGFISH (*Squalus acanthias*) FOR THE 2020/2021 FISHERY

Management Summary

Date of FMP Approval:	November 2002
Amendments	None
Addenda	Addendum I (November 2005) Addendum II October 2008) Addendum III (April 2011) Addendum IV (August 2012) Addendum V (October 2014) Addendum VI (October 2019)
Management Unit:	Entire coastwide distribution of the resource from the estuaries eastward to the inshore boundary of the EEZ
States with Declared Interest:	Maine – North Carolina
Active Boards/Committees:	Spiny Dogfish Management Board, Advisory Panel, Technical Committee, and Plan Review Team

I. Status of the Fishery Management Plan

In 1998, NMFS declared spiny dogfish overfished and initiated the development of a joint fishery management plan (FMP) between the Mid-Atlantic (MAFMC) and New England Fishery Management Councils (NEFMC) in 1999. NMFS approved the Federal Fishery Management Plan (FMP) in September 1999, but implementation did not begin until May 2000 at the start of the 2000/2001 fishing year.

In August 2000, the Atlantic States Marine Fisheries Commission (Commission) took emergency action to close state waters to the commercial harvest, landing, and possession of spiny dogfish when Federal waters closed in response to the quota being fully harvested. With the emergency action in place, the Commission had time to develop an interstate FMP, which prevented the undermining of the Federal FMP and further overharvest of the coastwide spiny dogfish population. Needing additional time to complete the interstate FMP, the Commission extended the emergency action twice through January 2003. During that time, the majority of spiny dogfish landings were from state waters because states had either no possession limits or less conservative possession limits than those of the Federal FMP.

The Commission approved the Interstate FMP for Spiny Dogfish in November 2002 (first implemented for the 2003-2004 fishing year). In general, the Interstate FMP (FMP) for spiny dogfish complements the Federal FMP. The goal of the FMP is "to promote stock rebuilding and management of the spiny dogfish fishery in a manner that is biologically, economically, socially, and ecologically sound." In support of this goal, the FMP established the following objectives:

1. Reduce fishing mortality and rebuild the spawning stock biomass to prevent recruitment failure and support a more sustainable fishery.
2. Coordinate management activities between state, Federal, and Canadian waters to ensure complementary regulations throughout the species' range.
3. Minimize the regulatory discards and bycatch of spiny dogfish within state waters.
4. Allocate the available resource in a biologically sustainable manner that is equitable to all the fishers.
5. Obtain biological and fishery related data from state waters to improve the spiny dogfish stock assessment that currently depends upon data from the Federal bottom trawl survey.

The original Interstate and Federal FMPs established an annual quota that was allocated via fixed percentages between two seasonal periods: 57.9% to Period I (May 1st to October 31st) and 42.1% to Period II (November 1st to April 30th). When the quota allocated to a period is exceeded, the amount over the allocation is deducted from the same period in the subsequent fishing year. The periods could have separate possession limits that were specified on an annual basis. The FMPs also allowed for a five percent rollover of the annual coastwide quota once the stock is rebuilt, and allows each state to harvest up to 1,000 spiny dogfish for biomedical supply or scientific research.

Addendum I (November 2005)

Addendum I to the Interstate FMP for Spiny Dogfish allows the Board to set the quota and trip limit for up to 5 years. This addendum was developed to provide fishermen with the ability to set long term business plans and goals for their fishery operations. The Board may adjust specifications during a fishing season with a 2/3-two-thirds majority vote.

Addendum II (October 2008)

Addendum II replaces the seasonal allocation with a regional distribution of the quota. The regional allocation distributes quota with 58% to Maine – Connecticut, 26% to New York – Virginia, and 16% to North Carolina. Paybacks to regional quota overages are applied in the subsequent fishing seasons.

Addendum III (April 2011)

Addendum III divides the southern region's annual quota of 42% into state-specific shares (see table below). It also allows for quota transfer between states, rollovers of up to 5% and state-specified possession limits, and includes a three-year reevaluation of the measures. The

Addendum's provisions apply only to states in the southern region (New York through North Carolina) and do not modify the northern region allocation. The states of Maine to Connecticut will continue to share 58% of the annual quota as specified in Addendum II.

Southern Region State Shares. Quota allocation differs slightly from specific options presented in the draft addendum and are based on needs of states in the southern region with a consideration of historic landings.

	NY	NJ	DE	MD	VA	NC
Percent of Annual Coastwide Quota	2.707%	7.644%	0.896%	5.920%	10.795%	14.036%

Addendum IV (August 2012)

The Addendum updates the definition of overfishing to be consistent with that of the Mid-Atlantic Fishery Management Council and provides the Board the flexibility to update or modify the management program's overfishing definition through Board action based on the recommendations of its Technical Committee. The prior overfishing definition, adopted in 2002, was based on the number of pups per female that recruit to the stock. The updated definition will now be based on maximum sustainable yield or a reasonable proxy, consistent with the best available science. Although there are no immediate impacts to regulations, the change allows the Commission and Council to work from the same starting point when determining annual specifications. The Board considered modifying the management program's 5% rollover provision to either preclude rollovers entirely without specific Board approval or to allow rollovers beyond the current 5% maximum with Board approval. The Board voted to maintain the 5% maximum rollover. Any rollover is predicated on a rebuilt stock.

Addendum V (October 2014)

Addendum V ensures consistency in spiny dogfish management with the Shark Conservation Act of 2010 by prohibiting processing at-sea, including the removal of fins. Prior to approval, states could process spiny dogfish at-sea if the fin to carcass ratio aboard the vessel did not exceed five percent by weight. The Board set an implementation date of May 1, 2015 for states to promulgate this measure.

Addendum VI (October 2019)

Addendum VI allows commercial quota to be transferred between all regions and states to enable full utilization of the coastwide commercial quota and avoid payback for unintended quota overages. Prior to this addendum, quota transfers were only possible between states with individual state quotas, whereas regions have not been granted the authority to donate or receive quota via transfers. Consequently, regions were unable to share in the benefits of quota transfers. In order for the northern region to participate in quota transfers, the Director of each state's marine fisheries agency within the region must agree to the transfer in writing. As with transfers between states, transfers involving regions do not permanently affect the shares of the coastwide quota. Additionally, the Addendum extends the timeframe for when quota

transfers can occur up to 45 days after the end of the fishing year to allow for late reporting of landings data.

II. Status of the Stocks

Stock size estimates (e.g., female SSB) for spiny dogfish rely heavily on fishery-independent data collected during the Northeast Fisheries Science Center (NEFSC) spring bottom trawl survey. Due to mechanical problems, the 2014 survey was unable to sample strata in the mid-Atlantic region. As a result, the 2015 assessment update for spiny dogfish was unable to produce reliable estimates of stock size for 2014, as well as stock size projections utilized for annual specifications. Accordingly, at the direction of the MAFMC and the Science and Statistical Committee (SSC), the NEFSC examined alternative methods to smooth out the effects of the missing 2014 survey data on projected estimates of SSB, F, and other stock status indicators (NEFSC 2015b). A Kalman filter approach was ultimately chosen as the best method to smooth out the effects of the missing data, and to project SSB forward. In 2016, while all core survey strata were completed, the survey was delayed and the effects of the delay in survey timing on the abundance indices are unknown (NEFSC 2017). In 2017 and 2018, the survey was completed on time and all core strata were surveyed.

Based on results of the 2018 stock assessment update, and in comparison to the biological reference points below, spiny dogfish are not overfished and overfishing is not occurring (NEFSC 2018). The MAFMC's SSC recommended not applying the Kalman filter to the three year moving average of 2016-2018 given the survey data were available and gap filling was not needed. Spiny dogfish was declared rebuilt in 2008 when female SSB exceeded the target level for the first time since implementation of the Interstate FMP. Female SSB has remained above the threshold level and was estimated to be 106,753 metric tons (235.36 million pounds) in 2018 (Table 1 and Figure 1). In 2017, F on exploitable females was estimated to be 0.202 and has remained below the target level since 2005 (Table 1 and Figure 2).

	Female Spawning Stock Biomass (SSB)	Fishing Mortality (F)
Target	B_{msy} Proxy = SSB_{max} (the biomass that results in the maximum projected recruitment) = 159,288 metric tons	There is no F target defined for management use at this time
Threshold	½ of SSB_{max} = 79,644 metric tons	F_{msy} Proxy = 0.244

The next benchmark stock assessment for spiny dogfish is scheduled for summer 2022. In the interim, in order to inform fishery specifications, the NEFSC will continue to summarize the most recent information on the status of spiny dogfish. The 2018 assessment update utilizes catch and landings data from 1982-2017, and NEFSC spring survey data from 1968-2017 (as noted, the survey was incomplete in 2014 and the 2016 survey was delayed). From 2009-2015, female SSB estimates based on area swept by NEFSC bottom trawl during spring surveys were above the target-level (NEFSC 2017). The 2016 estimate increased, while the 2017 estimate

decreased; in 2018 the estimate decreased further from 2017. It is important to note that these estimates from the assessment update are not based on outputs of the stochastic assessment model and cannot be directly compared to the SSB targets and thresholds.

III. Status of the Fishery

In the U.S., the majority of spiny dogfish commercial fisheries operate in state waters targeting aggregations of large females. As a result, an estimated 83% of the commercial landings (2018) are comprised of females, which is consistent with the long-term pattern (NEFSC 2018).

In 2020, total U.S. commercial landings based on state compliance reports were estimated at 12.7 million pounds (5,787 metric tons). Atlantic coast landings from Canada were significant from the early 1990s to the mid-late 2000s (hovering around 4.5 million pounds or 2,000 metric tons). Commercial landings from Canada and Distant Water fleets for 2019 or 2020 are not available at this time. Recreational harvest is estimated via the Marine Recreational Information Program (MRIP). In 2020, recreational harvest (A + B1) of spiny dogfish on the Atlantic coast was estimated at 56,851 fish or an estimated 263,594 pounds[1] (120 metric tons) which is an 81% increase relative to 2019 (Table 2). To address reduced intercept sampling caused by the COVID-19 pandemic, 2020 harvest estimates use imputed data from previous fishing years, and may be subject to change. On the coastwide level, the contribution of imputed data to the total harvest of spiny dogfish in pounds was 6% in weight and 7% in numbers of fish. Landings estimates for the U.S. commercial and recreational sectors are detailed in Table 2.

For 2020, dead discards from the U.S. commercial fishery were not available at the time of this report. Recreational releases (B2, or fish caught by recreational anglers and released back to the water) were estimated at 8.5 million pounds (3,896 metric tons). Applying a 20% post-release mortality rate (NEFSC 2019), 2020 recreational dead discards were estimated at 1.7 million pounds (779 metric tons), which is a 32% decrease relative to 2019 levels (2.5 million pounds).

IV. Status of Management Measures and Issues

Specifications

The spiny dogfish commercial fishery runs from May 1-April 30. The coastwide quota for the 2020/2021 season was set at 23.19 million pounds. For the northern region, the maximum possession limit was set at 6,000 pounds. Possession limits for states of New York-North Carolina vary by state and are detailed in Table 6.

Quotas

Per Addendum III, 58% of the annual quota is allocated to the northern region (states from Maine-Connecticut), and the remaining 42% is allocated to the states of New York-North Carolina via fixed percentages. Table 4 details 2020/2021 commercial quotas by region and state. All regions and states harvested within their quota the previous fishing year, therefore no

[1] Assuming the average weight of landed and discarded spiny dogfish is 5.12 pounds or 2.5 kilograms.

deductions were applied to 2020/2021 quotas. Quota transfers are allowed under Addendum III and until recently have been uncommon. For the 2020/2021 season, the northern region transferred quota to New Jersey (300,000 pounds) and Virginia (2 million pounds). As there was no stock assessment update or change to 2017 projections that indicated that the stock was below the biomass target, no quota was eligible for rollover per Addendum IV.

Based on compliance report data, commercial landings from the 2020/2021 fishing year were estimated at 12.7 million pounds (5,787 metric tons), which is approximately 55% of the coastwide quota and a 30% decrease relative to the previous season (Table 4). Virginia (27%), Massachusetts (52%), Virginia (22%), and New Jersey (15%) accounted for the majority of commercial landings by weight (Table 4).

From 2000-2011, the U.S. spiny dogfish commercial fishery, for the most part, had fully utilized its quota (MAFMC 2017). However, in recent years (2012-2018), the commercial fishery significantly underutilized its quota. The MAFMC Advisory Panel (2019) noted that markets are critical for stimulating fishing activity and that the low level of harvest relative to the quota in recent years is primarily due to low price per pound and effort, not biomass. Vessels generally have no problem catching their limits. Being such a low value fishery (hovering around $0.20/pound over the last 10-years; MAFMC 2018), even a small increase in price could stimulate fishing activity. Participation in the fishery has been further discouraged due to general public sentiment regarding sharks and shark fins which has created regulatory issues (e.g., foreign and domestic import and shipping bans) and other barriers to the market (e.g., the species common name dissuades many consumers).

V. Status of Research and Monitoring

Under the Interstate FMP for Spiny Dogfish, the states are not required to conduct any fishery-dependent or independent studies. The Interstate FMP requires an annual review of recruitment, spawning stock biomass, and fishing mortality, which relies heavily on the NEFSC's spring trawl survey data. However, states are encouraged to submit any spiny dogfish information collected while surveying for other species. Table 5 details state-implemented fishery-independent monitoring information relative to spiny dogfish compiled from annual state compliance reports. Please see individual reports for more information.

Exempted Fishing Permits (scientific/education permits)
States may issue exempted fishing permits for the purpose of biomedical supply, educational, or other scientific purposes. In 2019, North Carolina issued 51 exempted fishing permits for scientific and educational collection not specific to spiny dogfish. Of these permits, no interactions with spiny dogfish were reported.

VI. Annual State Compliance

The following lists the specific compliance criteria that a state or jurisdiction must implement in order to be in compliance with the Interstate FMP for Spiny Dogfish (*Section 5.1*):

1. States are required to close state waters to the commercial landing, harvest and possession of spiny dogfish for the duration of the seasonal period when the commercial quota is projected to be harvested in their state or region.
2. States are required to report landings weekly to NOAA Fisheries or SAFIS.
3. Dealer permits issued pursuant to state regulations must submit weekly reports showing at least the quantity of spiny dogfish purchased (in pounds), the name, and permit number of the individuals from whom the spiny dogfish were purchased.
4. States are required to implement possession limits as determined through the annual specification process.
5. States may issue exempted fishing permits for the purpose of biomedical supply not to exceed 1,000 spiny dogfish per year.
6. State regulations must prohibit "finning" as described in Addendum V.

Additionally, each state must submit a compliance report detailing its spiny dogfish fisheries and management program for the previous fishing year. Compliance reports are due annually on July 1st (Table 6) and must include at a minimum:

1. the previous fishing year's fishery and management program including activity and results of monitoring, regulations that were in effect and harvest, including estimates of non-harvest losses;
2. the planned management program for the current fishing year summarizing regulations that will be in effect and monitoring programs that will be performed, highlighting any changes from the previous year; and
3. the number of spiny dogfish exempted fishing permits issued in the previous fishing year, the actual amount (in numbers of fish and pounds) collected under each exempted fishing permit, as well as any other pertinent information (i.e. sex, when and how the spiny dogfish were collected). The report should also indicate the number of exempted fishing permits issued for the current fishing year.

Under the Spiny Dogfish FMP, a state may request *de minimis* status if its commercial landings of spiny dogfish are less than 1% of the coastwide commercial total. If granted, the state is exempt from the monitoring requirements of the commercial spiny dogfish fishery for the following fishing year. However, all states, including those granted *de minimis* status, must continue to report any spiny dogfish commercial or recreational landings within their jurisdiction via annual state compliance reports. New York and Delaware have requested *de minimis* status for the 2021/2022 fishing season (Table 6).

VII. Plan Review Team Recommendations

In evaluating compliance with the FMP, the Plan Review Team (PRT) notes that a number of states did not clearly indicate if landings data were reported to NOAA Fisheries or the Standard Atlantic Fisheries Information System (SAFIS)on a weekly basis. Staff noted that nearly all states within the management unit report landings through SAFIS on a daily basis. North Carolina does

not report daily through SAFIS but does report weekly landings to NOAA Fisheries as indicated in the weekly quota monitoring NOAA webpage. Moving forward, the PRT recommends that states more clearly indicate that landings are reported to NOAA and through SAFIS in their compliance reports. Additionally, the PRT notes that exempted fishing permits in recent years have primarily been for educational or research purposes, not biomedical. The Board should consider whether to adjust the language in the FMP moving forward to make clear this distinction. That being said, based on the PRT's review, all states have implemented regulations consistent with the requirements of the Interstate FMP for Spiny Dogfish and Addenda I-VI. Additionally, the Board should consider the current De Minimis provisions and what the purpose of designation is given all states still must report annual landings. That being said, New York and Delaware have requested and meet the requirements for *de minimis* status in the 2020/2021 fishing year.

Members of the PRT noted that states have improved in providing compliance reports that are standardized and uniform in format and should continue doing so moving forward. Staff will provide states with a template to submit compliance reports moving forward to aid with consistency. Additionally, the PRT indicated the need to continue monitoring the resource based on the results of the 2018 assessment update that indicated a recent declining trend in female SSB. The PRT expressed support for keeping spiny dogfish on the current assessment schedule (currently scheduled for benchmark stock assessment to be completed in 2022).

VIII. Research Recommendations

The following research priorities pertaining to spiny dogfish were identified in Special Report No. 89 (2013). **Please note** that the Board does not need to take action on these recommendations currently and a number of them will be evaluated through the next stock assessment which is currently underway.

Fishery-Dependent Priorities
High

- Determine area, season, and gear-specific discard mortality estimates coastwide in the recreational, commercial, and non-directed (bycatch) fisheries.
- Characterize and quantify bycatch of spiny dogfish in other fisheries.
- Increase the biological sampling of spiny dogfish in the commercial fishery and on research trawl surveys.
- Further analyses of the commercial fishery is also warranted, especially with respect to the effects of gear types, mesh sizes, and market acceptability on the mean size of landed spiny dogfish.

Fishery-Independent Priorities

- Conduct experimental work on NEFSC trawl survey gear performance, with focus on video work to study the fish herding properties of the gear for species like dogfish and other demersal groundfish.

- Investigate the distribution of spiny dogfish beyond the depth range of current NEFSC trawl surveys, possibly using experimental research or supplemental surveys.
- Continue to analyze the effects of environmental conditions on survey catch rates.

Modeling / Quantitative Priorities

- Continue work on the change-in-ratio estimators for mortality rates and suggest several options for analyses.
- Examine observer data to calculate a weighted average discard mortality rate based on an assumption that the rate increases with catch size.

Life History, Biological, and Habitat Priorities

- Conduct a coastwide tagging study to explore stock structure, migration, and mixing rates.
- Standardize age determination along the entire East Coast. Conduct an ageing workshop for spiny dogfish, encouraging participation by NEFSC, North Carolina Division of Marine Fisheries (NCDMF), Canada DFO, other interested agencies, academia, and other international investigators with an interest in spiny dogfish ageing.
- Identify how spiny dogfish abundance and movement affect other organisms.

Management, Law Enforcement, and Socioeconomic Priorities

- Monitor the changes to the foreign export markets for spiny dogfish, and evaluate the potential to recover lost markets or expand existing ones.
- Update on a regular basis the characterization of fishing communities involved in the spiny dogfish fishery, including the processing and harvesting sectors, based upon Hall-Arber et al. (2001) and McCay and Cieri (2000).
- Characterize the value and demand for spiny dogfish in the biomedical industry on a state by state basis.
- Characterize the spiny dogfish processing sector.

IX. References

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August 18, 2017. 30 pages

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Special Report No. 89 of the Atlantic States Marine Fisheries Commission. 2013. Research priorities and recommendations to support interjurisdictional fisheries management.

X. Tables

Table 1: Spiny dogfish female spawning stock biomass (SSB) in millions of pounds 1991-2018 and fishing mortality (F) point estimates, 1991-2017. A Kalman Filter was applied to the 2015 point-estimate. Point-estimates from 1991-2014 via the Kalman filter were not available at the time of this report. Although the absolute values will change after the Kalman filter is applied, the time series trend is similar. Source: NEFSC 2018.

Year	Female SSB	F
1991	516	0.082
1992	594	0.177
1993	485	0.327
1994	410	0.465
1995	294	0.418
1996	266	0.355
1997	252	0.234
1998	202	0.306
1999	114	0.289
2000	116	0.152
2001	136	0.109
2002	143	0.165
2003	129	0.168
2004	118	0.474
2005	105	0.128
2006	234	0.088
2007	312	0.090
2008	429	0.110
2009	360	0.113
2010	362	0.093
2011	373	0.114
2012	476	0.149
2013	466	NA
2014	NA	0.214
2015	306	0.126
2016	345	0.211
2017	257	0.202
2018	235	NA

Table 2: Landings estimates (pounds) of spiny dogfish off the Atlantic coast by commercial fisheries of the United States, Canada, and foreign fleets, and U.S. recreational harvest, 1987-2020. All values in pounds. Source: Commercial Data through 2018 provided by NEFSC 2019. 2019-202 U.S. Commercial landings provided through State Compliance Reports and SAFIS. Recreational Data from MRIP

Year	Canada	Distant Water Fleets	U.S. Commercial	U.S. Recreational	Total Landings
1987	619,498	306,442	5,959,859	707,683	7,593,483
1988	2,205	1,426,389	6,845,658	767,208	9,041,460
1989	368,172	564,383	9,903,197	485,016	11,320,768
1990	2,885,848	866,416	32,475,331	473,993	36,701,588
1991	676,818	515,881	29,049,484	529,109	30,771,292
1992	1,913,610	147,710	37,165,286	381,399	39,608,005
1993	3,163,630	59,525	45,509,707	412,264	49,145,126
1994	4,012,408	4,409	41,441,357	321,875	45,780,049
1995	2,107,617	30,865	49,775,493	196,211	52,110,185
1996	950,191	520,290	59,823,640	59,525	61,353,646
1997	983,261	471,789	40,457,417	242,508	42,154,974
1998	2,325,874	1,338,204	45,476,080	79,366	49,219,525
1999	4,609,860	1,221,359	32,748,858	182,983	38,763,062
2000	6,042,863	886,257	20,407,500	8,818	27,345,439
2001	8,421,648	1,492,528	5,056,497	55,116	15,025,789
2002	7,901,358	1,044,990	4,847,674	789,254	14,583,275
2003	2,870,415	1,417,571	2,579,437	119,049	6,986,472
2004	5,207,312	727,525	2,164,011	787,049	8,885,898
2005	5,004,487	727,525	2,528,114	92,594	8,352,720
2006	5,377,068	22,046	4,957,360	163,142	10,519,616
2007	5,255,814	68,343	7,723,004	284,396	13,331,558
2008	3,466,368	288,805	9,057,020	520,290	13,331,778
2009	249,122	180,779	11,854,242	224,871	12,509,014
2010	13,228	279,987	11,993,133	26,455	12,312,803
2011	273,373	315,261	20,899,798	127,868	21,616,299
2012	143,300	302,033	23,501,249	99,208	24,045,790
2013		134,482	16,120,181	147,710	16,402,373
2014	119,049	68,343	23,481,408	238,099	23,906,899
2015	2,205	50,706	19,098,623	97,003	19,248,537
2016	81,571	52,911	26,669,288	310,851	27,114,621
2017	119,049	0	19,257,356	319,009	19,663,006
2018	99,208		16,747,942	136,094	16,983,244
2019	NA	NA	18,435,114	116,376	18,551,490
2020	NA	NA	12,757,583	263,594	13,021,177

Table 3: Total dead discards estimates (pounds) from the U.S. Atlantic coast spiny dogfish fishery by sector, 1981-2020. Commercial dead discards for 2019 and 2020 are not available. Source: MRIP and NEFSC 2019.

Year	Commercial	Recreational (20% B2)	Total Dead Discards
1987	35,239,087	411,823	35,650,910
1988	35,307,210	601,420	35,908,630
1989	34,724,970	875,675	35,600,645
1990	41,754,621	830,701	42,585,322
1991	28,668,217	1,146,402	29,814,619
1992	41,401,992	577,170	41,979,161
1993	25,898,443	858,479	26,756,922
1994	18,435,804	654,331	19,090,135
1995	23,812,762	392,863	24,205,625
1996	13,136,779	205,030	13,341,809
1997	9,255,656	537,045	9,792,702
1998	7,305,008	460,325	7,765,333
1999	9,865,123	399,477	10,264,600
2000	6,128,182	370,376	6,498,558
2001	10,236,492	1,271,184	11,507,675
2002	10,392,799	1,099,664	11,492,464
2003	7,998,031	1,746,500	9,744,531
2004	12,011,321	2,982,410	14,993,731
2005	10,775,411	2,186,542	12,961,953
2006	10,847,557	2,574,996	13,422,553
2007	12,456,478	2,660,094	15,116,572
2008	9,843,805	2,442,719	12,286,524
2009	11,735,909	3,180,385	14,916,294
2010	8,146,291	2,134,513	10,280,804
2011	9,533,163	2,615,120	12,148,283
2012	10,081,275	1,903,028	11,984,303
2013	9,875,386	5,295,056	15,170,442
2014	10,657,861	7,724,988	18,382,849
2015	6,783,726	1,886,273	8,669,999
2016	7,122,686	4,001,826	11,124,513
2017	6,756,168	1,572,335	8,328,503
2018	5,310,158	1,642,883	6,953,041
2019	NA	2,555,481	NA
2020	NA	1,717,694	NA

Table 4: Commercial quotas and landings estimates in pounds for May 1, 2020 - April 30, 2021 by region and state. There was no adjustment to quotas due to the biomass estimate was below the target. Due to confidentiality, NY-NC landings estimates have been redacted. Source: State Compliance Reports.

State	Fixed Percent Allocation	Preliminary Quota	Adjusted Quota	Estimated Landings
Northern Region	58.00%	13,453,004	11,153,004	7,491,235
NY	2.71%	628,069	628,069	
NJ	7.64%	1,773,165	2,073,165	
DE	0.90%	207,835	207,835	
MD	5.92%	1,373,141	1,373,141	
VA	10.80%	2,503,932	4,503,932	
NC	14.04%	3,255,689	3,255,689	
Total	**100%**	**20,522,832**	**20,522,832**	**12,757,583**
% of quota harvested				**55%**
% diff. relative to previous fishing year (2019/2020 landings = 18,435,114 lbs.)				**30.7%**

Table 5: State implemented fishery-independent monitoring programs that encounter spiny dogfish. Source: annual state compliance reports, 2020. Note: this list is not comprehensive.

Fishery-Independent Monitoring Programs That Encounter Spiny Dogfish	Number of Spiny Dogfish Encountered	Comments
ME-NH Inshore Trawl survey	95	Spring survey cancelled due to COVID-19 pandemic; catch was from Fall survey
RI DFW, Monthly and seasonal trawl survey	2	2020 Fall Survey - 1; 2021 Spring Survey - 0; Monthly Survey - 1
CT Long Island Sound Trawl Survey	NA	2020 survey was not conducted due to the COVID-19 pandemic
NY DEC Multispecies Ocean Trawl Survey	408.1 lbs	Only two trips were attempted, due to COVID-19 pandemic
NJ Ocean Stock Assessment (trawl) Survey	0	No sampling due to COVID restrictions
DE Bay Bottom Trawl (30- and 16-foot)	108 (30-ft)	72 tows, majority taken in December (87)
NC DMF Gill Net Survey	76	sampled dogfish ranged from 723 to 958 mm, total length

Table 6: State-by-state compliance with the Interstate Fishery Management Plan for Spiny Dogfish, 2020/2021 reporting period. Source: annual state compliance reports, 2019. 'C' is compliant; 'NC' is noncompliant.

State	Report Submitted (Due July 1)	De Minimis Request	Biomedical Permit Harvest	Finning Prohibition	Possession limit (pounds per trip)
Maine	C	No	No	C	5,000
New Hampshire	C	No	No	C	6,000
Massachusetts	C	No	No	C	6,000
Rhode Island	C	No	No	C	6,000
Connecticut	C	No	No	C	6,000
New York	C	Yes	No	C	5,000
New Jersey	C	No	No	C	6,000
Delaware	C	Yes	No	C	10,000[#]
Maryland	C	No	No	C	up to 10,000*
Virginia	C	No	No	C	6,000
North Carolina	C	No	No	C	20,000

Maximum trip limit increased to 6,000 lbs following notification of the Federal trip limit increase. Specific implementation dates vary by state.

[#]It is unlawful for DE commercial fishermen to possess spiny dogfish taken from federal waters in excess of the federal possession limit.

*MD – possession limits range from 1,000 lbs to 10,000 lbs depending on permit category.

XI. Figures

Figure 1: Spiny dogfish spawning stock biomass, 1991 – 2018. Point-estimate for 2015 was derived via application of a Kalman filter. NEFSC 2018.

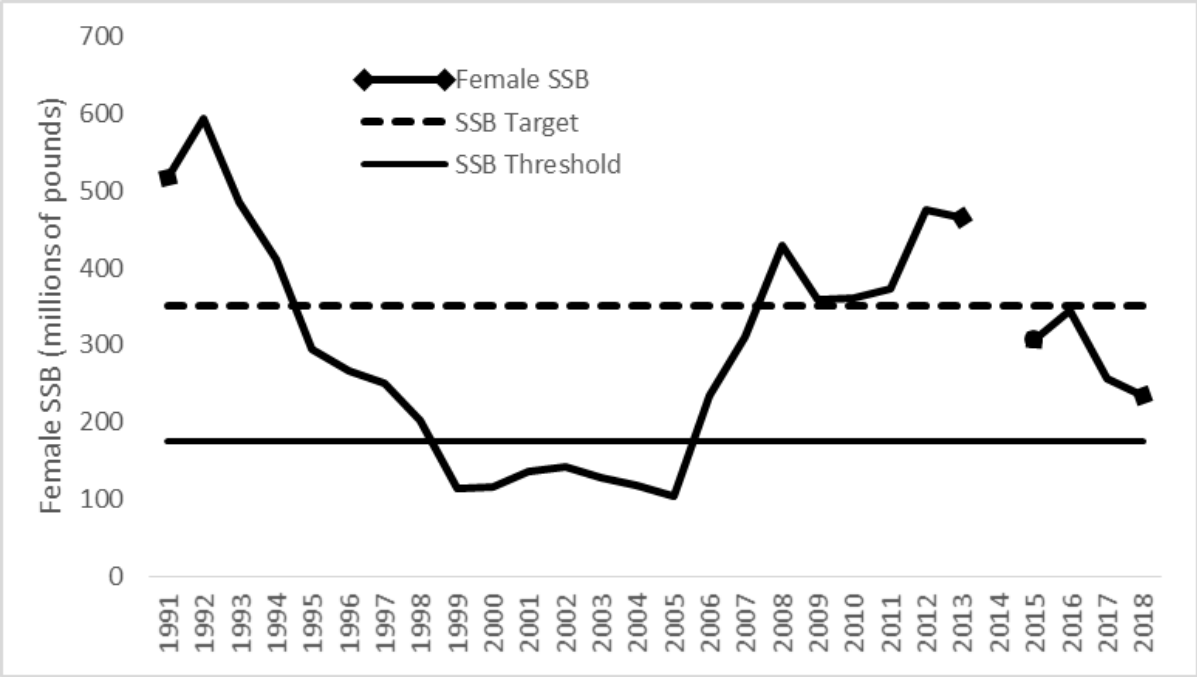

Figure 2: Fishing mortality rates in the spiny dogfish fishery, 1991 – 2017. Source: NEFSC 2018.