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.