



Spiny Dogfish AP Fishery Performance Report September 20, 2023

The Mid-Atlantic Fishery Management Council's (Council) Spiny Dogfish Advisory Panel (AP) met via webinar on September 20, 2023 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: Chris Rainone, James Fletcher, Jeremy Hancher, John Whiteside, Kevin Wark, Roger Rulifson, Scott Curatolo-Wagemann, Scott MacDonald, and Mark Sanford.

Others attending: Jason Didden (Council staff lead), Sonny Gwin, Alan Bianchi, Angel Willey, Cynthia Ferrio, David McCarron, and Yan Jiao.

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

Artificially low quota and low quota expectations are dampening demand. If you don't think you can maintain production you're not going to try. Increased fuel costs and dogfish prices also combine to keep landings low.

COVID-19 did not have a large impact on this fishery. Similar market issues persist as with previous years – demand has been low but stable recently – the market could support more landings than in the 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 name-change challenges have been highlighted in the past.

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. High fuel costs add to trucking costs, which is a substantial issue for this fishery given the processing situation.

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. Industrial uses could help develop a market for male dogfish.

Regarding the fin market – there are self-imposed bans by cargo lines that prohibit fin transport even from sustainable sources (i.e. this is beyond our control).

Better opportunities in other fisheries reduce spiny dogfish effort. For example, in Virginia, fishermen have calculated that oysters and shrimp can be better opportunities. It’s hard to attract/pay/retain a crew, often must fish solo. Any disruption to this fishery will exacerbate these issues and make it impossible to sustain participation.

Cornell has tried to expand domestic consumption of spiny dogfish and other undervalued/underutilized/lesser-known species through chefs’ sampler events, underserved communities/foodbanks, etc. See <https://www.localfish.org/>.

Environmental Conditions

Environmental conditions are always a factor in terms of dogfish distribution and availability to fishermen.

In NJ, we see fluctuations in the spring and different behavior seasonally but no major swings in recent years and consistent fall availability.

In VA, also don’t see a problem with dogfish – just like there wasn’t a problem when we were first forced to “rebuild” dogfish in the 2000s. Science does not reflect our experiences.

Condition of NC and MA inlets makes it very difficult to get product into ports. NC trawl fishermen can’t land spiny dogfish in VA due to state regulations. Fish houses continue to go out of business due to low seafood supply.

Management Issues

There’s no higher-perspective view of this fishery that you are going to eliminate it totally with further reductions given the likely impacts on the last remaining processor. We need a holistic approach to keep the fishery functioning given the financial impacts of low trip limits (given product is low value), and/or fishery closures. We are at a threshold where interest, and fishermen, will evaporate. Don’t say we didn’t tell you what the results of further reductions would be.

The artificially-low quota (flawed assessment and previous SSC decisions) broke the supply chain from the south, eliminating the primary southern fish house. The AP has been warning about the impacts on infrastructure of management decisions that are destroying this fishery with rollercoaster-style management and resulting shoreside gentrification. Industry needs managers to improve their awareness of the impacts of decisions. Loss of fish houses is a coast-wide issue – and the loss of infrastructure needs to be addressed to maintain a healthy fishery.

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.

There was discussion whether state by state quotas should be reconsidered. (There are no Council-federal state/regional quota allocations but there are Atlantic States Marine Fisheries Commission (ASMFC) quota allocation measures in their inter-state plan.) Eliminating or modifying regional quotas could theoretically expand opportunities and encourage additional processors. There was concern however that eliminating regional allocations may disadvantage southern states given the seasonal rotation of landings regionally and the May 1 fishing year start. A trial of any changes would be warranted. There was also concern about creating more of a derby fishery and additional processing disruptions if quotas are very low and could potentially be landed quickly with less regional constraints. If quota was higher then there would be different considerations. The overall consensus conclusion was that allocation changes would be risky with the current quota situation, and not warranted at this time.

Other Issues

The surveys are not representative of the biomass. Given the lack of an off-shelf survey and vertical water column usage by dogfish, we don't really know the population size. 1/10 of the needed area is surveyed. 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>. Also see Garry Wright's thesis that concluded that the NEFSC trawl survey is not accurately representing spiny dogfish biomass.

The AP would like a meeting regarding the new assessment and an open discussion with the AP of how the new assessment model works and why it is improved from previous efforts that have been apparent failures.

Windfarm impacts squeeze the fishery from the ocean-side and shoreside gentrification squeezes from the land-side – both are critical stressors in terms of fishery survival.

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

You should account for the continual nature of embryo development/pupping in the assessment.

Bigelow performance issues are doing a disservice to all the fisheries and fishermen. The repeated failure of the Bigelow since 2014 to complete its mission in terms of not fishing at a consistent time seasonally 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 abundance trends. This compounds uncertainty concerns and the Bigelow performance degrades the credibility of the resulting information (both regarding individual years and interpreting the time series). We have 2/10 years of full surveys in recent years. This affects all species' management. The Council should call in NEFSC's maritime operations manager to account for Bigelow performance issues.

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.

Research Priorities

We need to utilize commercial fishermen more in developing indices of abundance (not just the Bigelow). Fishermen are losing trust in the process with constant changes and new models. The CPUE-type indices being developed for monkfish should be considered for dogfish.

Explore using 3-D printing technology to improve "fillet" production from spiny dogfish.

Consider whether/how electro-fishing surveys could be used.

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

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.

Updated bycatch mortality information could help us understand biomass trends.

Could there be electromagnetic energy being transferred to the trawl affecting survey catches?

Why are people opting out of this fishery? Greying of the fleet? Costs? Other fisheries? We need to understand the vast drop in participation and what is projected for future trends.

Spiny dogfish fishing could have an environmental justice component as a relatively low-priced seafood.