

Research Priorities and Recommendations to Support Interjurisdictional Fisheries Management

Spiny Dogfish

The following research priorities pertaining to spiny dogfish were identified in Special Report No. 89 of the Atlantic States Marine Fisheries Commission (2013), the 2019 FMP Review for Spiny Dogfish, and a September 2020 memo from the Mid-Atlantic Fishery Management Council's Scientific and Statistical Committee.

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 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 increased with catch size.
- Evaluate the ecosystem context of Spiny Dogfish including quantifying their role as predator and prey, and effects of climatic factors such as changes in temperature and salinity on the distribution, growth and survival, as they impact both population dynamics and reference points.

Life History, Biological, and Habitat Priorities

- Conduct a coastwide tagging study to explore stock structure, migration, and mixing rates.
- Continue aging studies for spiny dogfish age structures (e.g., fins, spines) obtained from all sampling programs (include additional age validation and age structure exchanges), and conduct an aging workshop for spiny dogfish, encouraging participation by NEFSC, Canada DFO, other

interested state agencies, academia, and other international investigators with an interest in dogfish aging (US and Canada Pacific Coast, ICES).

- Identify how spiny dogfish abundance and movement affect other organisms.
- Investigate the distribution beyond the depth range of current NEFSC trawl surveys, possibly by using experimental research or supplemental surveys.

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.