



Atlantic States Marine Fisheries Commission

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MEMORANDUM

TO: Spiny Dogfish Management Board
FROM: Committee on Economics and Social Sciences (CESS)
DATE: August 3, 2026
SUBJECT: Overview of available social and economic information on the United States commercial spiny dogfish fishery to assess impacts of low quota and trip limits.

Executive Summary

In the fall of 2025, the Committee on Economics and Social Sciences (CESS) was asked to investigate available social and economic information on the United States (U.S.) Atlantic spiny dogfish commercial fishery. This review aims to help assess the impacts associated with low quotas and potential adjustments to trip limits. This memorandum provides a summary of relevant literature, a snapshot of the fishery from 2019-2024, and considerations for future research.

The commercial U.S. Atlantic spiny dogfish (*Squalus acanthias*) shark fishery operates along the Atlantic Coast from Maine to North Carolina. The fishery is jointly managed across state and federal waters using coastwide quotas and daily trip limits. Fishers primarily harvest the resource using bottom gillnets, with lesser amounts harvested by trawls and hook gear. Because the product has a low ex-vessel price, fisher who target spiny dogfish must catch large quantities to make profit. Over the last several years, the fishery has underutilized its quota, suggesting market limitations rather than resource availability.

There is a sharp contrast between the domestic and foreign markets. Domestically, the fishery is of low value with minimal consumer interest in food-grade products and is primarily driven by bait, fertilizer, and biomedical use. In contrast, foreign export serves as a critical substitute for whitefish (e.g., fish and chips and smoked belly flaps) in the European Union (EU) and United Kingdom (UK).

Since 2023, the market has encountered major supply-side limitations, including volume reductions from lowered quotas alongside an ongoing decrease in processing infrastructure. Because spiny dogfish is a high-volume, low-margin product, a minimum volume of landings is required to justify operating processing lines. The loss of southern processing infrastructure has left the fishery almost entirely dependent on remaining northern facilities. Industry advisors have noted the “tenuous viability” of the fishery. (MAFMC, 2025b).

I. Literature Review

A review of available literature yielded limited peer-reviewed social and economic analyses of the fishery, with most data residing in gray literature such as NOAA and Regional Fishery Management Council reports. Three studies by Dell'Apa et al. (2013) Dell 'Apa et al. (2014) and Wiersma and Carroll (2018) provide context for evaluating adjustments to quotas and trip limits. These analyses detail historical trade networks and explore how a bifurcated fresh and frozen export market impacts domestic processing capacity and dockside ex-vessel prices. Additionally, they emphasize key market and operational constraints, showing that depressed prices drive fishers to land high volumes to maintain profitability.

Key Findings:

Dell'Apa et al. (2013) utilized social network analysis to map global spiny dogfish flow. The study highlights the tension between long-term biological rebuilding and short-term social and economic goals, noting the significant market leverage held by the EU and UK. When the U.S. restricts exports, the global trade network adapts by sourcing from other countries such as South America, Africa, and Asia. The study also found that strict international trade regulations provided an economic benefit to the U.S. fishery by protecting market value from unregulated global stocks.

Dell' Apa et al. (2014) identified that global spiny dogfish exploitation is primarily driven by European Union demand for large female meat. The study found that historical reductions in U.S. quotas prompted the EU to shift its sourcing to other international suppliers, which disrupted established trade networks and redirected fishing pressure toward unregulated stocks in other regions.

Because the meat must be processed within a 48-hour window and market values remain low, fishers are forced to land significant volumes to maintain economic viability. These operational constraints, coupled with previous quota limitations, resulted in the closure of multiple U.S. Atlantic processing facilities, particularly within North Carolina and Virginia.

Wiersma and Carroll (2018) were commissioned by the Massachusetts Division of Marine Fisheries. The report found the U.S. provided over 90% of the global supply, while the EU accounted for 90% of the demand. The total maximum global demand was capped at approximately 20 (18–22 million pounds) million whole weight annually. The study noted that the threshold is determined by domestic processing capacity (roughly 120,000 pounds per day) rather than available biomass. Exceeding this threshold historically resulted in processor inventory gluts, triggering massive market price corrections, such as the 40% drops seen following oversupply in 2011 and 2016.

Limitations of the Literature

These studies predate several major management and market shifts, including Addendum VI and VI, significant quota reductions (2023-2025), increases in trip limits from (6,000 to 7,500 pounds per day for most states), and 2024 Atlantic sturgeon bycatch measures. Furthermore, market dynamics have been heavily altered by the COVID-19 pandemic, Brexit trade disruptions, and stricter EU sustainability standards (e.g., Marine Stewardship Council

certification costs and shipping bans on shark products). Consequently, historical assumptions regarding U.S. supply and maximum global demand must be applied with caution.

II. Snapshot of the Fishery (2019-2024)

In the absence of more recent peer-review literature describing the fishery, a snapshot is provided to better characterize the current conditions in the fishery.

Recent data indicates a severe contraction within the fishery. Based on information requested from ACCSP, total commercial landings of spiny dogfish fell sharply from 17.4 million pounds (17,412,953) in 2019 to 8.4 million pounds (8,429,036 lbs) in 2024 (Table 1). The 51.6 percent reduction in raw volume reveals ongoing consolidation across both the harvesting and processing sectors.

Fleet Dynamics

From 2019 to 2024, commercial spiny dogfish landings were landed by a total of 456 distinct vessels (including reports “FROM SHORE”). The number of reporting vessels dropped from 248 in 2019 to 142 in 2024. Effort is increasingly concentrated with only 13 vessels accounting for 50 percent of total landings in 2024, down from 22 vessels in 2019 (Table 2). Gillnets remain the primary gear type, representing an average of 77 percent of the catch over the period and peaking at 88 percent in 2024 (Table 3).

Geographic Shifts in Landings

Landings remain centralized in Virginia, Massachusetts, New Jersey, and Maryland. However, North Carolina, historically a major participant, saw landings drop from over 1.1 million pounds (1,124,291 pounds) in 2019 to under 159,000 (158,667) pounds in 2024 (Table 4, Figure 1).

Processing Sector Consolidation

The total number of dealers purchasing spiny dogfish dropped over a third, from 58 in 2019 to 39 in 2024. The top three dealers processed approximately 67 percent of all landings in 2024 (Table 5). ACCSP does not collect information on the number of processors, however, based on input from industry representatives in Council reports there are very few remaining processors with a single large-scale processor operating in the Northern Region (MAFMC 2025b). This heavy centralization places the market at risk of monopsony, where buyers may impose informal daily or weekly catch limits to prevent inventory gluts and ensure freezer storage capacity for higher value products, artificially suppressing fleet effort.

III. Conclusions and Future Research Needs

The commercial spiny dogfish fishery is currently contracting due to lower quota utilization, market and processing constraints, and increased operating costs (e.g., fuel). Also, while ex-vessel prices have remained nominally stable at approximately \$0.20–\$0.22 per pound, they have substantially declined when adjusted for inflation (MAFMC, 2025a). As Dell'Apa et al., (2013, 2014) demonstrated, when the U.S. restricts exports, the global trade network adapts by sourcing from other countries. Since the U.S. supply has declined in recent years and there is still strong global demand, international buyers are likely establishing alternate supply chains to fill the gap, further impacting the price U.S. harvesters receive at the dock.

As noted in the literature limitations, the core assumptions of the historical literature no longer apply directly but could continue to be used as a guide for considerations. While Wiersma and Carroll (2018) warned that raising trip limits under high-quota conditions could saturate markets and depress prices, current allocations are far below global oversupply levels. However, with the continued decline in domestic processing and storage capacity, processing bottlenecks could mirror historical inventory gluts, leading to market corrections during peak seasonal landing.

Within regions experiencing a loss of local processing capacity, introducing greater flexibility through increased daily or weekly landing aggregates that maintain conservation goal could be beneficial. This approach may help generate the volumes fishers need to offset overland transportation costs to remain economically profitable. Additionally, any future adjustments to harvest levels should include monitoring of ex-vessel prices to evaluate potential market impacts.

Future Research Needs

The CESS recommends the board consider additional research to support spiny dogfish management decisions. We strongly support additional studies that focus on the following core areas:

- Socioeconomic and operational data collection for the harvest sector, focusing on vessel expenses (e.g., fuel, transport, and offloading), crew demographics, and the fleet's financial dependency on this specific resource.
- Revised assessment of domestic processing infrastructure to define modern daily throughput capacities and storage limits.
- Development of predictive models incorporating production thresholds and market substitutes for both the harvesting and processing industries.
- Analysis of dealer market power and its influence on ex-vessel pricing.
- Formal cost-benefit evaluation of daily versus weekly landing limits to optimize distribution and mitigate seasonal market gluts.
- Updated analysis of international export flows and shifting global market demand.
- Examination of the economic impacts and ecological trade-offs resulting from spiny dogfish encounters with higher value fisheries (e.g., groundfish and lobster).

IV. References

Dell'Apa, A., Bangley, C. W., & Rulifson, R. A. (2014). Who let the dogfish out? A review of management and socio-economic aspects of spiny dogfish fisheries. *Reviews in Fish Biology and Fisheries*.

Dell'Appa, A., J. Johnson, D. Kimmel., R. Rulifson. 2013. The international trade and fishery management of spiny dogfish: A social network analysis. *Journal of Ocean and Coastal Management*. (80)

Mid-Atlantic Fisheries Management Council (MAFMC). 2025a. Spiny Dogfish Information Document. Prepared by Jason Didden, Council Staff. 11 pages

Mid-Atlantic Fisheries Management Council (MAFMC). 2025b. Spiny Dogfish Advisory Panel Fishery Performance Report. 8 pages

Wiersma, J., & Carroll, M. 2018. An Economic Analysis of Spiny Dogfish: Historical Trends, Future Markets, and Implications for Management Action. Massachusetts Division of Marine Fisheries, Seafood Marketing Program. 16 pages

V. Appendix

Table 1. Commercial Landings (lb dw) of spiny dogfish fishery, 2019-2024

Common Name	2019	2020	2021	2022	2023	2024
Shark, Dogfish, Spiny	17,412,953	17,395,674	10,250,145	10,790,481	10,914,791	8,429,036

Source: ACCSP (2019-2024).

Table 2. Concentration of landings among active top vessels in the spiny dogfish fishery (2019-2024)

Shark Dealers	2019	2020	2021	2022	2023	2024
Top 5 vessels (% landings)	22	24	20	17	16	13
Total Number of Vessels	248	203	179	184	153	142

Source: ACCSP (2019- 2024).

Table 3. Percent of spiny dogfish landings by gear type from 2019-2024.

Gear	2019	2020	2021	2022	2023	2024	Grand Total
Gillnet	67.86%	70.09%	84.89%	81.25%	83.26%	88.00%	77.11%
Not Coded	20.05%	19.26%	4.90%	5.53%	5.39%	5.35%	11.94%
Longline	5.91%	7.80%	5.11%	8.47%	6.62%	0.16%	6.06%
Handline/ Hook & Line	2.72%	0.04%	1.35%	2.32%	2.56%	4.79%	2.15%
Bottom Otter Trawl	1.98%	2.02%	3.08%	1.73%	1.95%	1.45%	2.04%
All other gear (with less than 1% in any given year)	1.48%	0.79%	0.67%	0.70%	0.22%	0.25%	0.70%

Source: ACCSP (2019- 2024).

Table 4: Commercial landings of spiny dogfish (lb dw) by state and year (2019-2024)

State	2019	2020	2021	2022	2023	2024
Virginia	6,099,217	6,009,754	3,597,475	4,568,150	6,018,041	4,925,766
Massachusetts	6,589,925	6,603,894	3,770,580	3,834,461	2,763,959	1,934,265
New Jersey	1,718,868	1,987,957	1,670,471	1,506,296	1,135,171	732,592
Maryland	645,431	381,492	442,291	C	790,340	558,588
North Carolina	1,124,291	1,501,331	131,501	70,392	6,147	158,667
New Hampshire	C	C	C	C	C	C
Rhode Island	413,467	183,899	106,370	21,035	33,340	45,717
New York	31,599	13,862	62,217	28,710	28,152	45,717
Connecticut	C	C	C	C	C	C
Maine	C			C	C	
Delaware	C		C	C	C	
Total	17,412,953	17,395,674	10,250,145	10,790,481	10,914,791	8,429,036

Source: ACCSP (2019- 2024).

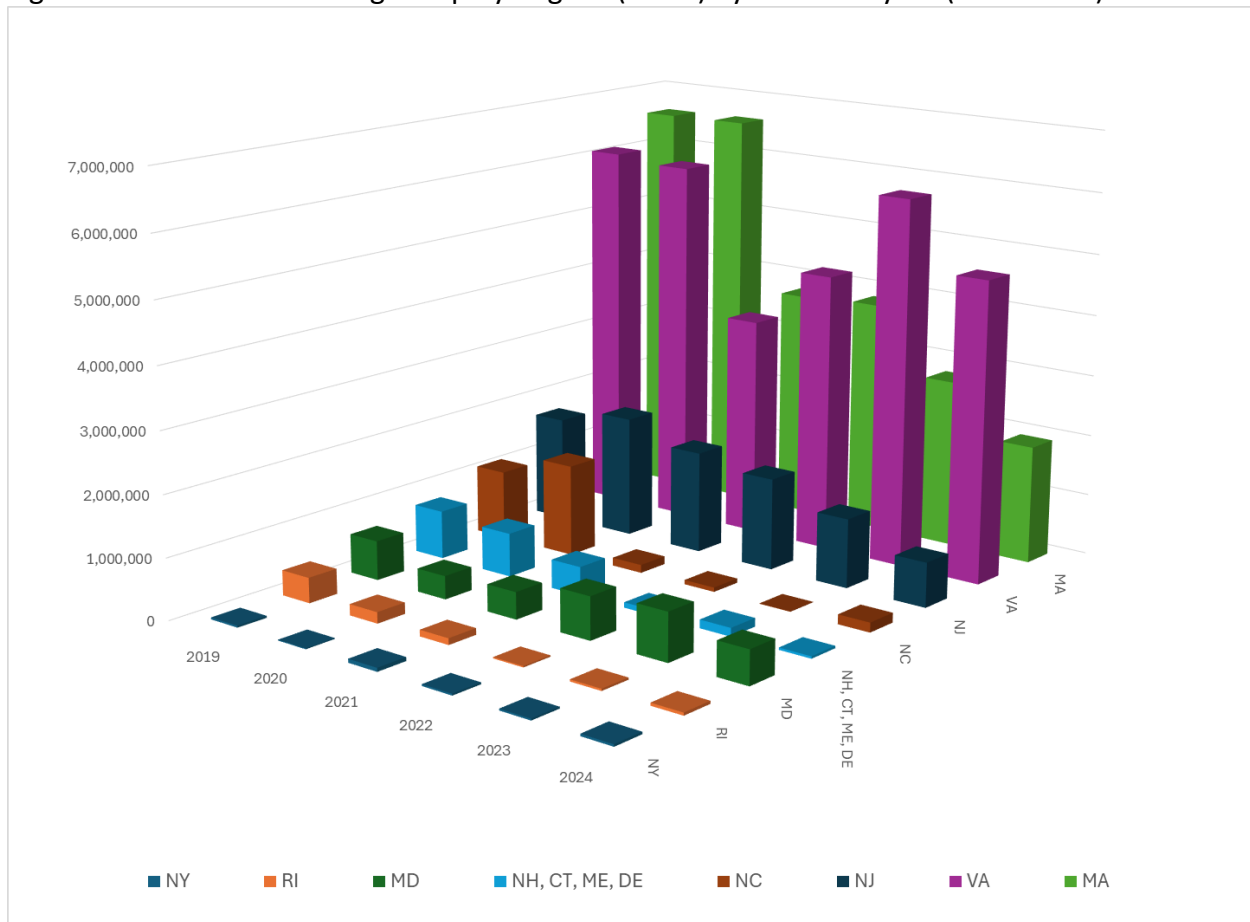
C = Landings are not disclosed due to reasons of confidentiality.

Table 5. Concentration of landings among active dealers in the spiny dogfish fishery (2019-2024).

Spiny Dogfish Shark Dealers	2019	2020	2021	2022	2023	2024
Top 3 Dealers % landings	58.49	54.77	57.04	73.2	64.37	66.8
Number of Dealers in Top	18	18	14	11	12	11
Total Number of Dealers	58	48	56	53	53	39

Source: ACCSP (2019- 2024)

Figure 1. Commercial landings of spiny dogfish (lb dw) by state and year (2019-2024).



Source: ACCSP (2019- 2024).