



## Spiny Dogfish Fishery Information Document

September 2023

This Fishery Information Document provides an 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 Data sources for Fishery Information Documents are generally from unpublished National Marine Fisheries Service (NMFS) survey, dealer, vessel trip report (VTR), permit, and Marine Recreational Information Program (MRIP) databases and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

- 2022 fishing year landings were about 19% higher than the previous year, but still relatively low in the context of the most recent 10 years.
- The current 2023 fishing year quota is about 12.0 million pounds (59% lower than 2022).
- A peer review of the 2023 Management Track Assessment is pending – the assessment uses data through 2022. Staff will summarize the peer review of the assessment at the Advisory Panel meeting on September 20, 2023.

### Basic Biology

Spiny dogfish is the most abundant shark in the western north Atlantic and ranges from Labrador to Florida, being most abundant from Nova Scotia to Cape Hatteras, North Carolina. Migrations are believed to primarily occur 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>.<sup>1</sup>

### Status of the Stock

A peer review of the 2023 Management Track Assessment is pending. While the 2023 Management Track Assessment and the 2022 Research Track Assessment both indicate recent declines in spiny dogfish biomass, the status of the stock is not yet clear.

## 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. Quotas are set based on the current science and Council's risk policy to avoid overfishing and rebuild stocks if/when necessary.

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 7,500 pounds (increased from 6,000 for the 2022 fishing year). Some states mirror the federal trip limit, but states can set their own trip limits. The annual quota has been allocated to states through the Atlantic States Marine Fisheries Commission (<http://www.asmfc.org/species/spiny-dogfish>).

### *Commercial Fishery (Recreational catch comprises a relatively low portion of fishing mortality)*

Figure 1 and Table 1 illustrate spiny dogfish landings for the 2000-2022 fishing years relative to the quotas in those years. The Advisory Panel has previously noted that the fishery is subject to strong market constraints given weak demand. 2022 fishing year landings were about 19% higher than the previous year, but still relatively low in the context of the most recent 10 years.

Figure 2 provides inflation-adjusted spiny dogfish ex-vessel prices in "2022 dollars." Partial-year 2023 prices to-date are also provided (also in "2022 dollars").

Figure 3 illustrates preliminary landings from the 2023 and 2022 fishing years relative to the current quota. The last data point (2023) is typically the most incomplete.

Tables 2-4 provide information on landings in the 2020-2022 fishing years by state, season, and gear type. The seasonal periods were changed since the last document to maintain data confidentiality.

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 overall trends in participation.

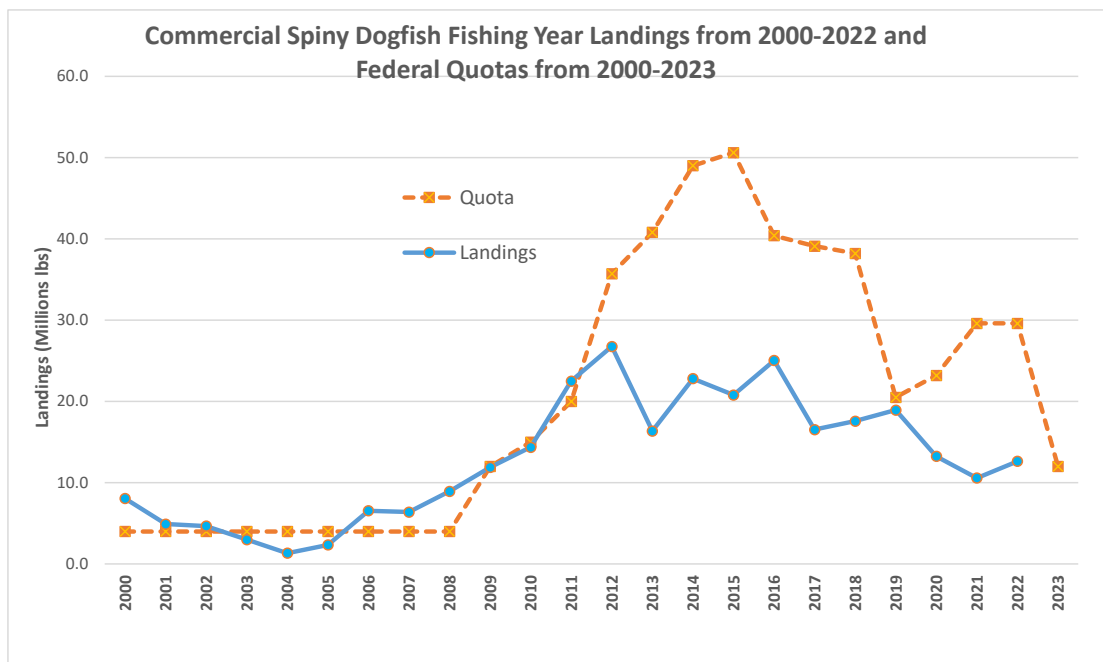


Figure 1. Annual spiny dogfish landings and federal quotas 2000-2023 Source: NMFS unpublished dealer data.<sup>2</sup>

Table 1. Annual spiny dogfish landings and federal quotas 2000-2023 Source: NMFS unpublished dealer data.<sup>2</sup>

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	18.9
2020	23.2	13.3
2021	29.6	10.6
2022	29.6	12.6
2023	12.0	

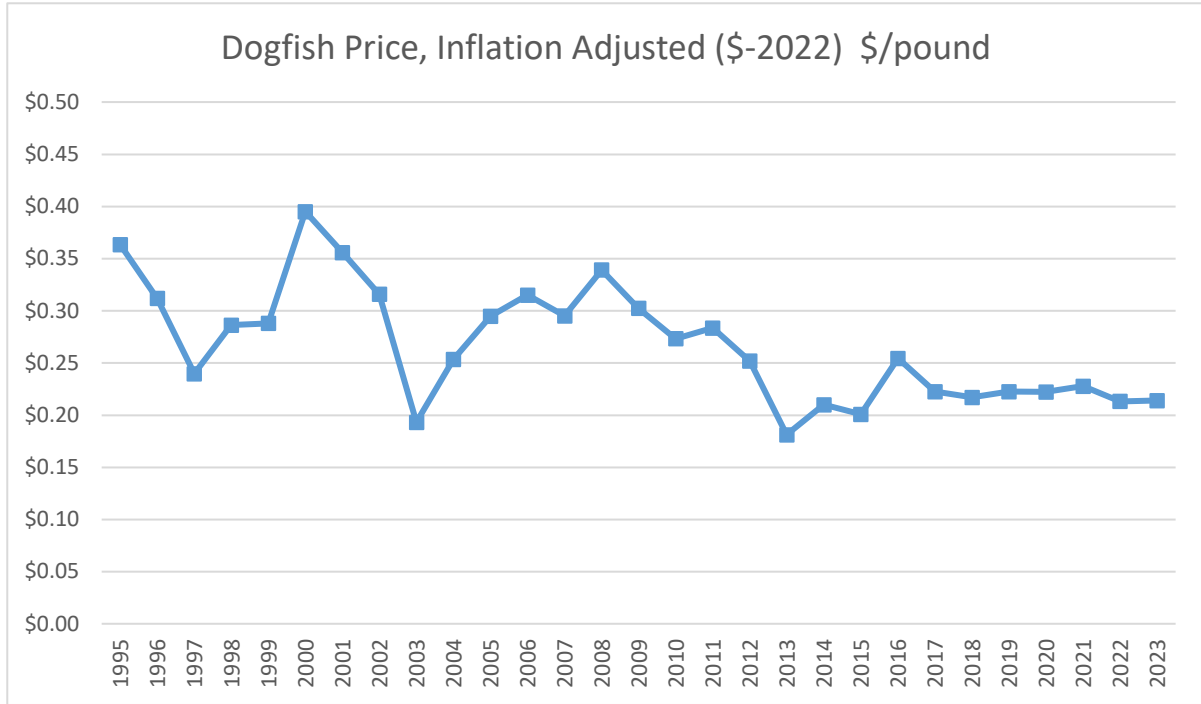


Figure 2. 1995-2023 fishing years' average prices of spiny dogfish in 2022 dollars per live pound (adjusted to "2022 dollars" using the GDP deflator). 2023 data is through early September only. Source: NMFS unpublished dealer data.<sup>2</sup>

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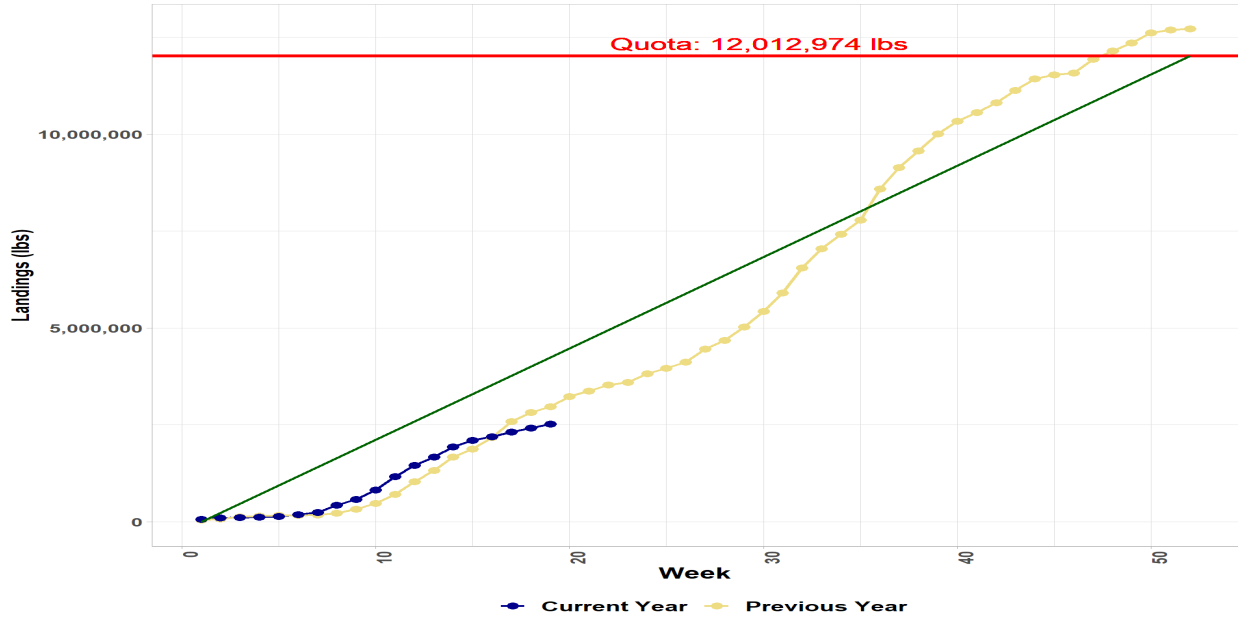


Figure 3. Preliminary Spiny dogfish landings; the 2023 fishing year (Starts May 1) is in blue (through September 13, 2023), and the 2022 fishing year is in yellow-orange. Source: <https://www.fisheries.noaa.gov/new-england-mid-atlantic/commercial-fishing/quota-monitoring-greater-atlantic-region> . <sup>2</sup>

Table 2. Commercial Spiny Dogfish landings (live weight – millions of pounds) by state for 2020-2022 fishing years. Source: NMFS unpublished dealer data. <sup>3</sup>

Year	MA	VA	NJ	Other (ME, NH, RI, CT, NY, MD, NC)	Total
2020	6.6	3.3	2.0	1.4	13.3
2021	3.8	4.0	1.6	1.2	10.6
2022	3.8	6.0	1.7	1.1	12.6

Table 3. Commercial Spiny Dogfish landings (live weight – millions of pounds) by months for 2020-2022 fishing years. Source: NMFS unpublished dealer data. <sup>2</sup>

Year	May-Aug	Sept-Dec	Jan-April	Total
2020	4.9	5.5	2.8	13.3
2021	2.9	4.6	3.1	10.6
2022	2.7	5.0	4.9	12.6

Table 4. Commercial Spiny Dogfish landings (live weight – millions of pounds) by gear for 2020-2022 fishing years. Source: NMFS unpublished dealer data. <sup>2</sup>

Year	GILL_NET_SINK_OTHER	LONGLINE_BOTTOM	TRAWL_OTTER_BOTTOM_FISH	Unknown/Other	Total
2020	9.7	1.8	0.4	1.4	13.3
2021	9.2	0.5	0.3	0.6	10.6
2022	10.1	0.9	0.2	1.3	12.6

Table 5. Participation in fishing years 2000-2022 by federally-permitted vessels. State-only vessels are not included. Source: NMFS unpublished dealer data.<sup>2</sup>

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
2021	15	27	11	26	79
2022	28	9	14	29	80

**References**

<sup>1</sup> 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.

<sup>2</sup> Unpublished NMFS dealer and/or Vessel Trip Report data.

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