

**Spiny Dogfish Advisory Panel (AP) Informational Document - August 2016**  
**Prepared by Jason Didden, Council Staff**

**\*\*Note - Data Sources for the following are generally from unpublished standard NMFS databases unless noted...everything should be considered preliminary at this point.**

### **Basic Biology**

Spiny dogfish (*Squalus acanthias*) is a coastal shark with populations on the continental shelves of northern and southern temperate zones throughout the world. It is the most abundant shark in the western north Atlantic and ranges from Labrador to Florida, but is most abundant from Nova Scotia to Cape Hatteras, North Carolina. Its major migrations on the northwest Atlantic shelf are north and south, but it also migrates inshore and offshore seasonally in response to changes in water temperature. Spiny dogfish have a long life, late maturation, a long gestation period, and 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 they 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: <http://www.nefsc.noaa.gov/publications/tm/tm203/tm203.pdf>.

### **Status of the Stock**

Reports on “Stock Status,” including Stock Assessment Workshop (SAW) reports and peer-review reports are available online at the NEFSC website: <http://www.nefsc.noaa.gov/nefsc/saw/>. An assessment update in 2015 found that the stock is not overfished nor subject to overfishing. Due to missing 2014 data the Council’s SSC utilized an alternative smoothing approach (Kalman filter) for survey data implemented by Dr. Paul Rago – details are available at <http://www.mafmc.org/ssc-meetings/2015/nov-24>. The NEFSC is currently updating the spiny dogfish indices (a data update, not an assessment update) – once that becomes available it will be forwarded to the AP.

## Obs vs Kalman Smooth

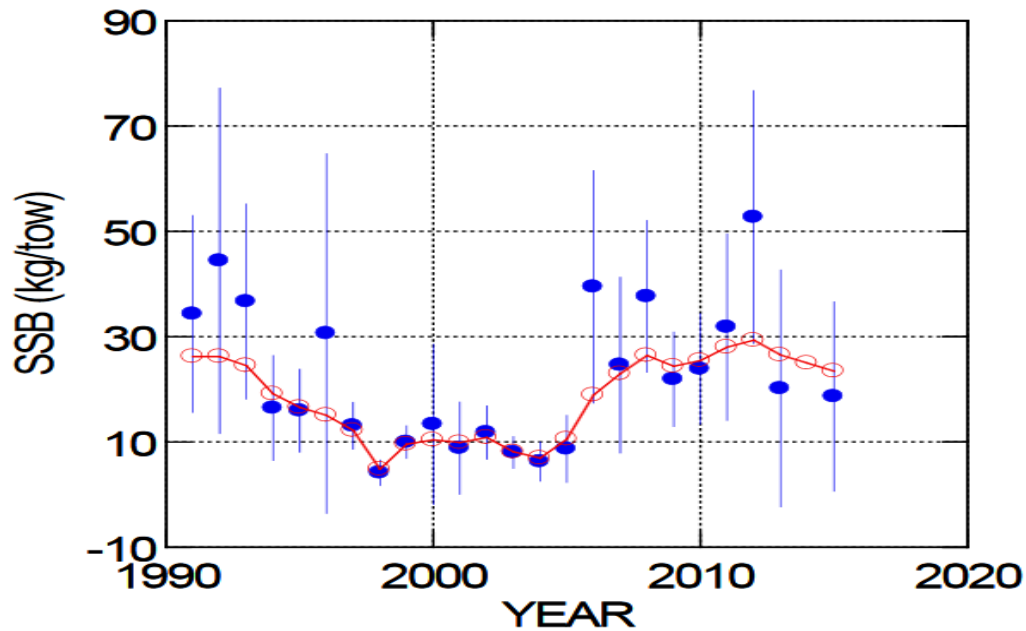


Figure 1. Survey results and Kalman Smooth, 1991-2015 (2016 pending)  
<http://www.mafmc.org/s/Evaluation-of-Alternative-Smoothing-Options-for-Spiny-Dogfish-Abundance-Estimates.pdf>

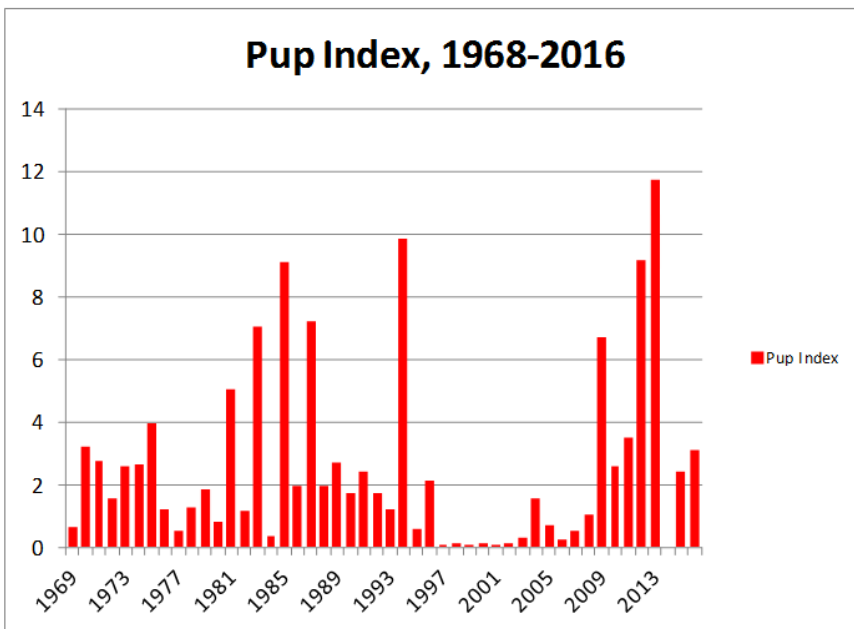


Figure 2. Estimated swept area biomass (mt) of total pups (spiny dogfish < 36 cm) captured in the NEFSC spring bottom trawl survey, 1968-2016. Survey was incomplete in 2014; no estimate available.

## Regulatory Summary

Spiny Dogfish regulations are summarized at <https://www.greateratlantic.fisheries.noaa.gov/regs/infodocs/spinydogfactsheet.pdf>. We are currently in multi-year regulations from May 2016-April 2019 (see Table 1 below), but the Council and its Scientific and Statistical Committee review multi-year specifications each year.

## Fishery Performance

At the onset of the domestic commercial fishery in the early 1990's, population biomass for the Northwest Atlantic stock of spiny dogfish was at its highest estimated level (approx. 1.2 billion lb). A large scale unregulated fishery developed and quickly depleted the stock of mature female spiny dogfish such that in 1997 a stock assessment showed that the stock was overfished (NEFSC 1997). The Spiny Dogfish FMP was developed in 1998 and implemented in 2000 in order to halt further depletion of mature female spiny dogfish and allow the stock to recover to a sustainable level. Because the directed commercial fishery concentrated on mature females, rebuilding required elimination of that directed fishery. The rebuilding program was successful and in 2010 NMFS communicated the rebuilt status of the stock to the Councils.

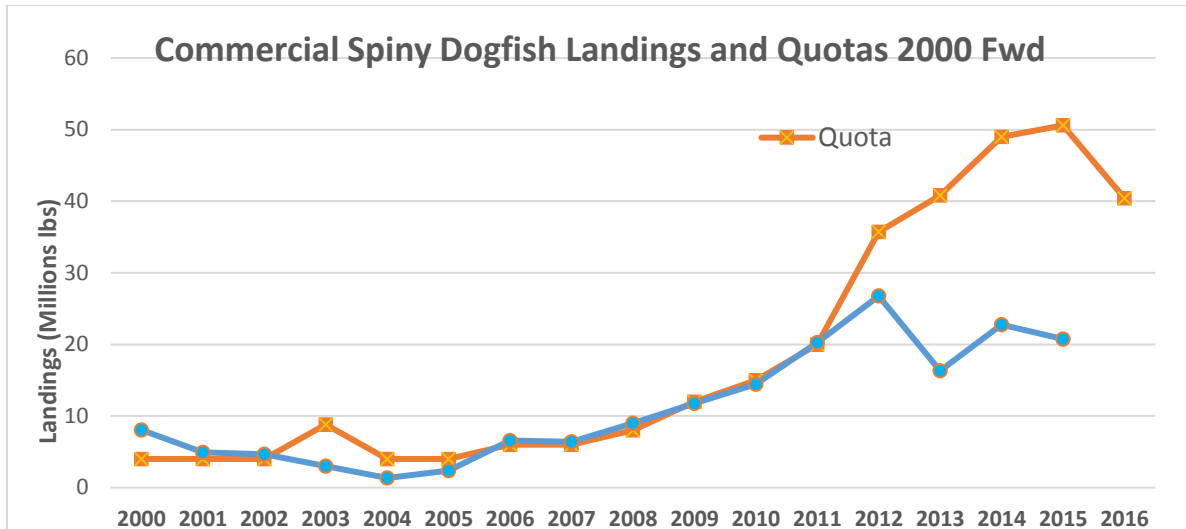
The current (May 1, 2016 – April 30 2019) quotas are derived from the recommendations of the Council's Scientific and Statistical Committee (SSC) for Acceptable Biological Catch (ABC), and how various components of fishing mortality are handled by the spiny dogfish fishery management plan, as described in the table below. The trip limit is 6,000 pounds in Federal waters however individual states may set more restrictive possession limits.

**Table 1. May 2016 to April 2019 Spiny Dogfish Specifications**

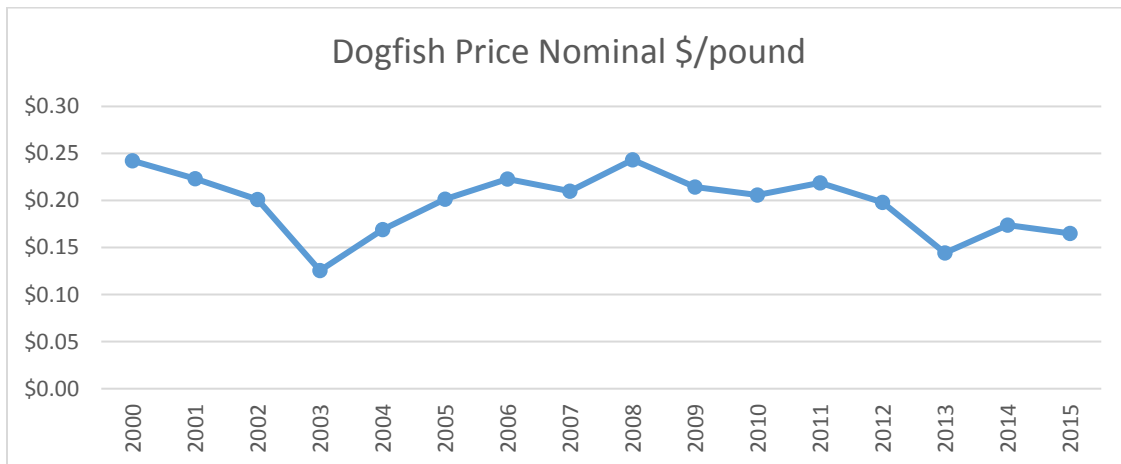
Specifications	Basis	2016 (pounds)	2016 (mt)	2017 (pounds)	2017 (mt)	2018 (pounds)	2018 (mt)
OFL	Projected Catch at Fmsy	64,414,664	29,218	na	na	na	na
New ABCs	Council Risk Policy	52,066,572	23,617	50,805,528	23,045	49,901,633	22,635
Canadian Landings	= avg last 3 years (10,11,12)	143,300	65	143,300	65	143,300	65
Domestic ABC	= ABC – Canadian Landings	51,923,272	23,552	50,662,228	22,980	49,758,333	22,570
ACL	= Domestic ABC	51,923,272	23,552	50,662,228	22,980	49,758,333	22,570
Mgmt Uncert. Buffer	Ave pct overage since 2011	0	0	0	0	0	0
ACT	= ACL - mgmt uncertainty	51,923,272	23,552	50,662,228	22,980	49,758,333	22,570
U.S. Discards	=3 year average 12-13-14	11,494,167	5,214	11,494,167	5,214	11,494,167	5,214
TAL	ACT – Discards	40,429,105	18,338	39,168,060	17,766	38,264,165	17,356
U.S. Rec Landings	= 2014 estimate	68,343	31	68,343	31	68,343	31
Comm Quota	TAL – Rec Landings	40,360,761	18,307	39,099,717	17,735	38,195,822	17,325

OFL = Overfishing Level; ABC = Acceptable Biological Catch; ACL = Annual Catch Limit; ACT = Annual Catch Target; TAL = Total Allowable Landings; Rec = Recreational; Comm = Commercial.

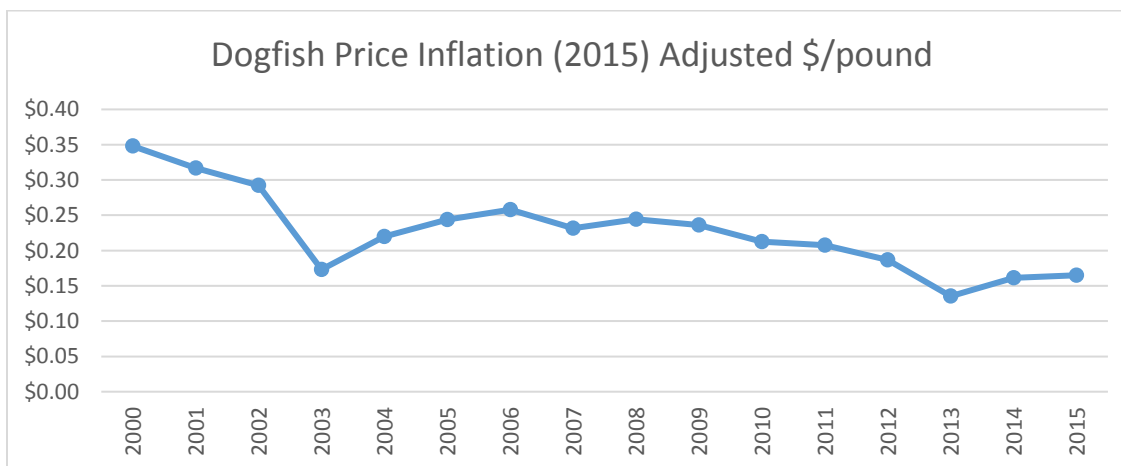
The following pages provide information on landings and prices since 2000 (page 4), the progression of landings through the year for the last several years (page 5), landings by state, month, and gear for 2013-2015 (page 6), and vessel activity by several categories of vessels based on landings since 2000 (page 7).



**Figure 3. Spiny Dogfish Landings and Quotas 2000-2015. 2015 = May 1, 2015 to April 30, 2016.**  
 Source: Unpublished NMFS dealer reports



**Figure 4. U.S. Spiny Dogfish fishing year ex-vessel prices (Nominal)**  
 Source: Unpublished NMFS dealer reports



**Figure 5. U.S. Spiny Dogfish fishing year ex-vessel prices (Producer Price Index adjusted, 2015 dollars)**  
 Source: Unpublished NMFS dealer reports

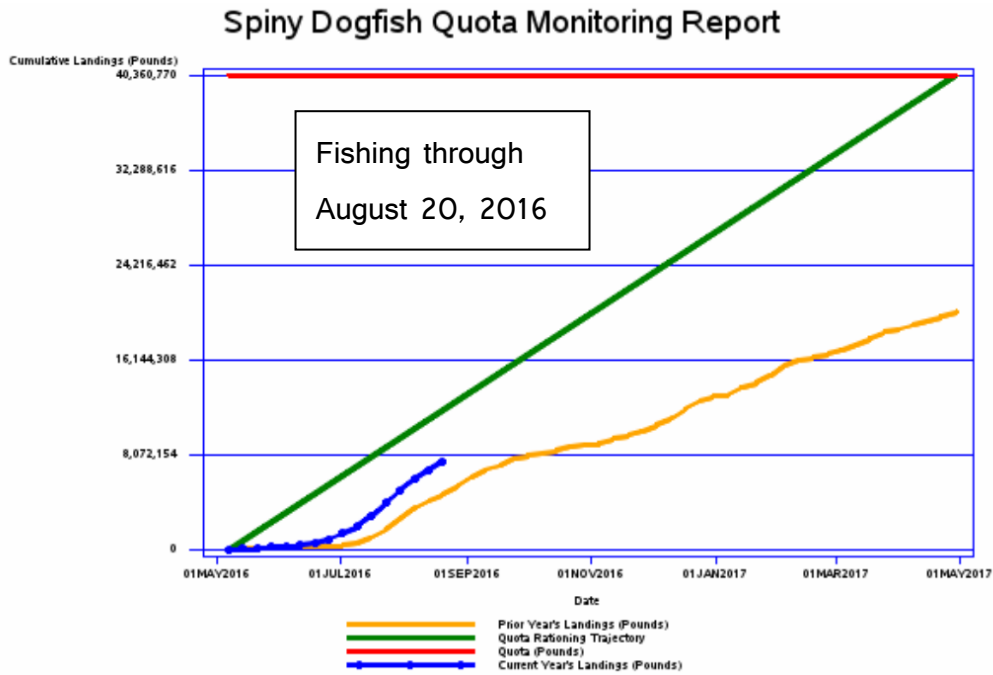


Figure 6. Spiny Dogfish Landings (Blue = 2016-2017 Fishing Year; Orange = 2015-2016 Fishing Year) (Current and Last Year)

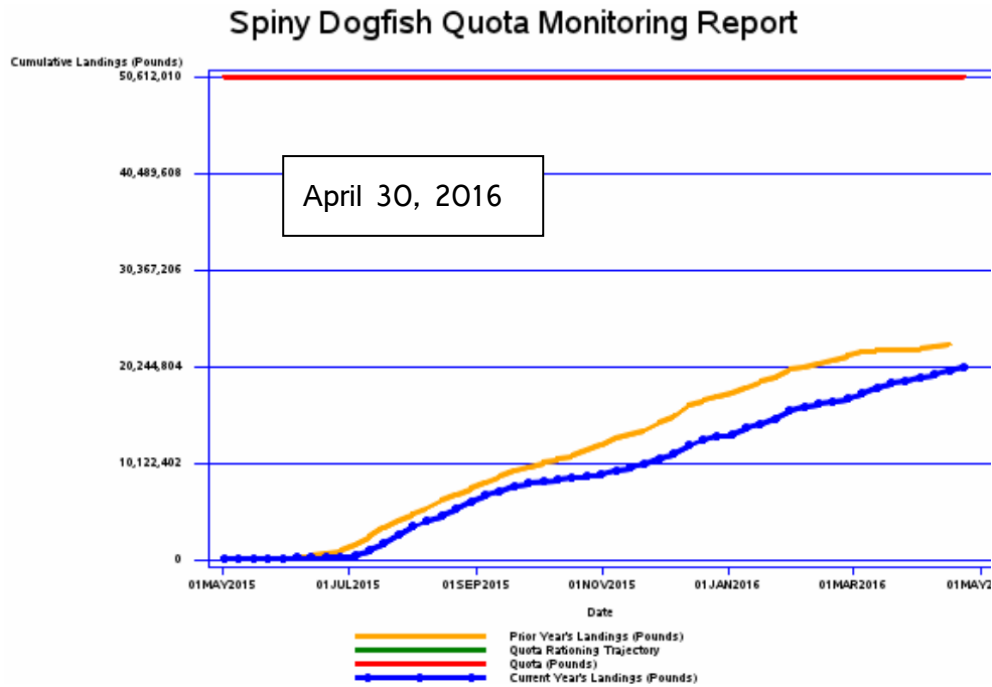


Figure 7. Spiny Dogfish Landings (Blue = 2015-2016 Fishing Year; Orange = 2014-2015 Fishing Year) (Last Year and Year Before)

**Table 2. 2013-2015 Calendar Year dogfish landings by state**

YEAR	CT	MA	MD	ME	NC	NH	NJ	NY	RI	VA	Other/NA	Total
2013	21,991	6,207,653	1,124,319	106,610	3,134,810	515,448	1,776,465	82,292	1,000,514	2,150,296	141	16,120,539
2014	33,864	9,422,869	1,051,609	214,763	5,396,223	1,704,651	2,202,747	69,034	689,445	2,641,962	15,924	23,443,091
2015	34,400	7,849,795	1,140,724	20,454	3,835,242	923,635	1,910,056	29,835	528,559	2,796,559	76	19,069,335

Source: unpublished NEFSC dealer reports

**Table 3. 2013-2015 Calendar Year dogfish landings by month.**

YEAR	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	1,902,651	1,618,510	1,729,851	939,487	580,834	1,151,001	1,881,288	970,960	1,216,361	1,261,138	1,607,103	1,261,355
2014	1,330,398	2,407,670	1,948,007	711,112	189,828	649,121	3,150,575	2,911,739	2,818,723	1,817,351	2,220,089	3,288,478
2015	2,149,252	1,879,910	1,042,833	664,004	217,713	188,187	3,051,504	2,879,635	1,859,773	811,894	1,737,913	2,586,717

Source: unpublished NEFSC dealer reports

**Table 4. 2013-2015 Calendar Year dogfish landings by gear.**

YEAR	GILL_NET_SINK_ _OTHER	GILL_NET_SET_ _STAKE_SEA_ BASS	LOGLINE_ BOTTOM	TRAWL_OT TER_BOTT OM_FISH	HAND_LINE_O THER	GILL_NET_DRIFT_ LARGE_PELAGIC	GILL_NET_ RUNAROU ND	LOGLINE_ _PELAGIC	Other/ Unknown
2013	8,990,456	2,649,603	1,340,575	1,202,915	726,030	308,735	175,109	0	727,116
2014	11,632,466	4,733,309	3,662,223	1,157,981	1,058,551	277,303	148,709	93,527	679,022
2015	10,103,553	3,283,804	2,939,522	846,502	1,228,404	184,228	169,974	14,970	298,378

Source: unpublished NEFSC dealer reports

**Table 5. Number of vessels active in various annual landing ranges (pounds per vessel per year)**

YEAR	Vessels 200,000+	Vessels 100,000 - 199,999	Vessels 50,000 - 99,999	Vessels 10,000 - 49,999
2000	30	24	25	122
2001	4	12	11	32
2002	2	14	8	31
2003	4	5	3	11
2004	0	0	0	43
2005	0	0	2	65
2006	0	0	8	117
2007	1	5	17	74
2008	0	11	18	107
2009	0	11	42	191
2010	0	22	42	124
2011	2	55	71	140
2012	20	40	56	181
2013	10	29	43	83
2014	29	37	39	88
2015	26	26	34	56

*Source: unpublished NEFSC dealer reports*