

Northeast Skate Complex

Fishery Management Plan

Amendment 5



DRAFT

Affected Environment – Human Communities

March 2020

**Note: This is based on Framework 8 with additions noted in green.
This section will continue to be updated as Amendment 5
progresses.**

Prepared by the
New England Fishery Management Council
In consultation with the
National Marine Fisheries Service



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2.0 AFFECTED ENVIRONMENT

2.1 HUMAN COMMUNITIES

This action evaluates the effect management alternatives may have on the economy, way of life, and traditions of human communities. These social and economic impacts may be driven by changes in fishery flexibility, opportunity, stability, certainty, safety, and/or other factors. While social and economic impacts could be solely experienced by individuals, it is more likely that impacts would be experienced across communities, gear types, and/or vessel size classes. Summarized here are the fisheries and human communities most likely to be impacted by the Alternatives under Consideration (Section ???). Social, economic and fishery information herein helps describe the response of the fishery to past management actions and predicting how the Framework 8 alternatives may affect human communities. Also, this section establishes a descriptive baseline to compare predicted and actual changes resulting from management. Additional information is contained in Framework 6 (NEFMC 2019).

MSA Section 402(b), 16 U.S.C. 1881a(b) states that no information gathered in compliance with the Act can be disclosed, unless aggregated to a level that obfuscates the identity of individual submitters. The fishery data in this framework are thus aggregated to at least three reporting units, to preserve confidentiality. Additional standards are applied to reporting the fishing activity of specific states or fishing communities. To report landings activity to a specific geographic location, the landings have been attributed to at least three fishing permit numbers and the landings must be sold to three dealer numbers. However, the dealers do not necessarily have to be in the same specific geographic location.

2.1.1 Commercial Skate Fishery

Skates are harvested in two very different fisheries, one for bait and one for human consumption. As bait, skates are used primarily for the American lobster (*Homarus americanus*) fishery, which prefers small, whole skates and is the more historic and directed skate fishery relative to the fishery for human consumption, which harvests skates for their wings. Since 2003, with the implementation of the original Skate FMP, all vessels landing skate (above incidental amounts (500 lb of wings) must be on a groundfish, monkfish or scallop Day-at-Sea (DAS).

Bait fishery: Vessels involved in the bait fishery are primarily from Southern New England ports and target little skates (>90%) and, to a much lesser extent, juvenile winter skates (<10%). Juvenile winter skates and little skates are difficult to differentiate due to their nearly identical appearance. Bait skate is primarily landed by trawlers, often as a secondary species while targeting monkfish or groundfish.

The bait fishery, based on FY 2010-2018 averages, is largely based out of Rhode Island (primarily Pt. Judith, also Newport, Tiverton and Block Island) with other ports in Massachusetts (Fall River, New Bedford, Bourne and Provincetown), Connecticut (New London, Stonington), New York (Long Island), and New Jersey (Belford, Sea Isle City) also active in the directed bait fishery. The directed skate fishery by Rhode Island vessels occurs primarily in federal waters less than 40 fathoms from the Rhode Island/Connecticut/New York state waters boundary east to the waters south of Martha's Vineyard and Nantucket out to about 69°W. The most landings are caught south of Block Island in federal waters. Effort on skates increases in state waters seasonally to supply increased market demand from the lobster fishery in the spring through fall. Skates caught for lobster bait are landed whole by otter trawlers and either sold 1) fresh, 2) fresh salted, or 3) salted and strung or bagged for bait by the barrel. Inshore lobster boats usually use 2 – 3 skates per string, while offshore boats may use 3 – 5 per string. Offshore boats may actually “double bait” the pots during the winter months when anticipated weather conditions prevent the gear from being regularly tended. The presence of sand fleas and parasites, water temperature, and anticipated soak time between trips determine the amount of bait per pot. Within the directed

monkfish gillnet fishery, there is also a seasonal gillnet incidental skate fishery, in which mostly winter skates are sold for lobster bait and as cut wings for processing.

Fishermen have indicated that the market for skates as lobster bait has been relatively consistent. Size is a factor that drives the dockside price for bait skates. For the lobster bait market, a “dinner plate” is the preferable size to be strung and placed inside lobster pots. Little and winter skates are rarely sorted prior to landing, as fishermen acknowledge that species identification between little skates and small winter skates is very difficult. Quality and cleanliness of the skate also determine the price paid by the dealer, rather than just supply and demand. The quantity of skates landed in a day has little effect on price, because there has been ready supply of skates available for bait from the major dealers, and the demand for lobster bait has been relatively consistent. Numerous draggers and lobster vessels have historically worked out seasonal cooperative business arrangements with a stable pricing agreement for skates.

Due to direct, independent contracts between draggers and lobster vessels, recorded skate landings in the fishery are known to be under 100%. While bait skates are always landed (rather than transferred at sea) they are not always reported, because they can be sold directly to lobster vessels by non-federally permitted vessels, which are not required to report as dealers.

Lobster bait usage varies regionally and from port to port, based upon preference and availability. Some lobstermen in the northern area (north of Cape Cod) prefer herring, mackerel, menhaden and hakes (whiting and red hake) for bait, which hold up in colder water temperatures; however, the larger offshore lobster vessels still indicate a preference for skates and Acadian redfish in their pots. Some offshore boats have indicated they will use soft bait during the summer months when their soak time is shorter. Skates used by the Gulf of Maine vessels are caught by vessels fishing in the southern New England area.

Wing fishery: The other primary market for skates in the region is the wing market. Larger skates, mostly captured by trawl gear, have their pectoral flaps, or wings, cut off and sold into this market. The fishery for skate wings evolved in the 1990s as skates were promoted as “underutilized species,” and fishermen shifted effort from groundfish and other troubled fisheries to skates and dogfish. Attempts to develop domestic markets were short-lived, and the bulk of the skate wing market remains overseas. Winter, thorny, and barndoor skates are large enough for processing of wings, but due to their overfished status, possession and landing of thorny skates has been prohibited since 2003. Following a rebuilt determination, limited landings of barndoor skate was allowed following FW5 (NEFMC 2018). Winter skate remains the dominant component of the wing fishery, but illegal thorny wings still occasionally occur in landings ([90 day finding for thorny skate](#)). The assumed effectiveness of prohibition regulations is thought to be 98% based on recent work that examined port sampling data ([90 day finding for thorny skate](#)). That means 98% or more of the skates being landed for the wing market are winter skates, so regulations for the wing fishery primarily have an impact on that species.

The wing fishery is a more incidental fishery that involves a larger number of vessels located throughout the region. Vessels tend to catch skates when targeting other species like groundfish, monkfish, and scallops and land them if the price is high enough.

The southern New England sink gillnet fishery targets winter skates seasonally along with monkfish. Highest catch rates are in the early spring and late fall when the boats are targeting monkfish, at about a 5:1 average ratio of skates to monkfish. Little skates are also caught incidentally year-round in gillnets and sold for bait. Several gillnetters indicated that they keep the bodies of the winter skates cut for wings and salt them for bait. Gillnetters have become more dependent upon incidental skate catch due to cutbacks in their fishery mandated by both the Monkfish and Multispecies FMPs. Gillnet vessels use 12-inch mesh when fishing for monkfish and catch larger skates. Southern New England fishermen have reported increased catches of barndoor skates in the last few years.

Only in recent years have skate wing landings been recorded separately from general skate landings. Landed skate wings are seldom identified to species by dealers. Skate processors buy whole, hand-cut,

and/or onboard machine-cut skates from vessels primarily out of Massachusetts and Rhode Island. Because of the need to cut the wings, it is relatively labor-intensive to fish for skates. Participation in the skate wing fishery, however, has recently grown due to increasing restrictions on other, more profitable groundfish species. It is assumed that more vessels land skate wings as an incidental catch in mixed fisheries than as a targeted species.

New Bedford emerged early-on as the leader in production, both in landed and processed skate wings, although skate wings are landed in ports throughout the Gulf of Maine and extending down into the Mid-Atlantic. Today, Chatham is one of the major ports for skate wings and food skate. Skate wings are also landed significantly in Point Judith and New Bedford. Vessels landing skate wings in ports like Portland, ME; Portsmouth, NH; and Gloucester, MA are likely to land them incidentally while fishing for species like groundfish and monkfish.

The current market for skate wings remains primarily an export market. France, Korea, and Greece are the leading importers. There is a limited domestic demand for processed skate wings from the white tablecloth restaurant business. Winter skates landed by gillnet vessels are reported to go almost exclusively to the wing market. Fishermen indicate that dealers prefer large-sized winter skates for the wing market (over three pounds live weight). Bodies from skates landed for the wing fishery are used as bait in the lobster and Jonah crab fisheries.

2.1.1.1 Commercial Skate Permits and Vessels

There is only one type of Federal skate permit (Category 1), an open-access permit. Anyone with a valid vessel operator’s permit can obtain a Federal skate permit through GARFO. Vessels with a skate permit may commercially fish for, possess, or land skate caught in or from the EEZ. This category includes all gear types. The following species of skates comprise the NE skate complex and are included under the Federal skate permit: Winter skate; barndoor skate; thorny skate; smooth skate; little skate; clearnose skate; and rosette skate.

Both the number of skate permits issued and active permits declined between FY 2009 and 2018 (Table 1). There have been about 400 active permits in recent years, down from over 550 early in the time series, and the percent active has been 20-24% each year since 2009.

Table 1. Number of skate permits, issued and active, calendar year 2009-2018.

Year	Permits issued	Active permits			% active
		Total	Wing	Bait	
2009	2,574	572	502	24	22%
2010	2,503	550	475	54	22%
2011	2,326	567	486	36	24%
2012	2,265	527	455	30	23%
2013	2,202	455	390	41	21%
2014	2,148	452	385	38	21%
2015	2,084	440	372	33	21%
2016	2,075	418	358	38	20%
2017	2,049	423	365	56	21%
2018	2,033	392	254	28	19%

Table 2. Number of vessels entering the skate fishery, and wing and bait fisheries, by year.

FY	All Vessels	Wing Vessels	Bait Vessels
2004	155	153	22
2005	90	84	11
2006	70	71	14
2007	58	56	15
2008	36	37	18
2009	37	38	10
2010	49	48	21
2011	34	35	4
2012	33	32	5
2013	11	10	13
2014	25	24	7
2015	25	25	5
2016	17	17	7
2017	26	25	18
2018	6	6	5
<p><i>Note: "Entering" defined as vessels landing skate wings/bait for the first time in year X. Vessels are only counted once, even if they drop out and re-enter.</i></p>			

Table 3. Number of vessels exiting the skate fishery, and wing and bait fisheries, by year.

FY	All Vessels	Wing Vessels	Bait Vessels
2004	70	72	0
2005	103	107	9
2006	106	103	13
2007	94	94	16
2008	98	98	7
2009	72	72	29
2010	100	111	8
2011	71	70	26
2012	84	85	11
2013	96	98	5
2014	66	69	12
2015	71	69	13
2016	67	70	7
2017	63	61	10
2018	129	130	33
<p><i>Note: "Exiting" defined as vessels which landed skate wings/bait in the previous fishing year and did not land skates in the current year.</i></p>			

2.1.1.2 Catch and Landings

The skate fishery caught 24,128 mt in FY 2018, or 77% of the overall ACL (Table 5), a slight decrease from FY 2017 landings (25,294 mt, Table 4). No reactive AMs were triggered in FY 2018. The wing fishery caught 74.6% of its TAL and the bait fishery caught 63.5% of its TAL. State landings in FY 2018 were 576 mt (not shown in table), and recreational catch was 1,088 mt (from Table 14). Total live discards in 2018 were 23,000 mt and dead discards were 7,580 mt (Table ???).

Note that NMFS estimates commercial skate landings from the dealer weigh-out database and reports total skate landings according to live weight (i.e., the weight of the whole skate). This means that a conversion factor is applied to all wing landings so that the estimated weight of the entire skate is reported and not just the wings. While live weight must be considered from a biological and stock assessment perspective, it is important to remember that vessel revenue from skate landings are for landed weight (vessels in the wing fishery only make money for the weight of wings they sell, not the weight of the entire skate from which the wings came).

Table 4. FY 2017 catch and landings of skates compared to management specifications.

Management Specification	Specification Amount (mt)	Catch or Landings (mt)	Percent Caught or Landed
ABC/ACL	31,081	25,294	81.4%
ACT (75% of ABC)	23,311	25,294	104%
Assumed Discards + State Landings	10,721	9,318	n/a
TAL Bait	4,218	3,978	94.3%
TAL Wings	8,372	8,465	101.1%

Source: Northeast Skate Complex 2018 (for FY 2017) Annual Monitoring Report, Sept. 2018.

Table 5. FY 2018 catch and landings of skates compared to management specifications.

Management Specification	Specification Amount (mt)	Catch or Landings (mt)*	Percent Caught or Landed
ABC/ACL	31,327	24,128	77.6%
ACT (75% of ABC)	28,194	24,128	85.6%
Assumed Discards + State Landings	12,406	8,455	n/a
TAL Bait	5,289	3,356	63.5%
TAL Wings	10,499	7,837	74.6%

Source: Northeast Skate Complex 2019 (for FY 2018) Annual Monitoring Report, Sept. 2019.

Due to the relative absence of recreational skate fisheries, virtually all skate landings are derived from commercial fisheries. Skates have been reported in New England fishery landings since the late 1800s. However, commercial fishery landings never exceeded several hundred metric tons until the advent of distant-water fleets during the 1960s (a full description of historic landings is in Amendment 3, NEFMC, 2009). Total skate landings have fluctuated between FY 2010 and 2018, largely attributable to the wing fishery as landings in the bait fishery have remained relatively stable (Table 10. Skate revenue relative to all revenue from active skate vessels, FY 2010-2018, and Table 11). It is unclear what is driving the trend in wing landings as quota is likely not limiting the fishery. A potential explanation is the decrease in winter skate survey index that suggests fewer winter skate were available to the fishery. Recently, most of the skate wing landings (80% in 2017-2018) occurred on trips declared into the Northeast multispecies sector fishery or the monkfish fishery (Table 6). Skate bait landings occurred on a wider variety of trips.

Table 6. Skate landings by VMS declaration and skate fishery disposition, FY 2017-2018, combined.

VMS Declaration	Bait (landed lb)	Wing (landed lb)
Multispecies Sector	7,450,041	9,316,243
Multispecies Common	2,940,528	190,423
Monkfish	954,352	7,003,502
Scallop	1,000	32,410
Herring	0	1,217
Squid, Mackerel, Butterfish	96,945	363,361
Unmatched/No Declaration	7,078,314	2,647,941
Declare out of Fishery	5,487,427	928,602
Total	24,008,607	20,483,699

Source: NMFS, Fisheries Statistics Office, October 2019.

2.1.1.3 Effort in Skate Fishery

[add info on areas and gear]

Table 7. Number of active skate vessels by number of trips landing skates

FY	Total Vessels	5 or fewer trips	6-10 trips	11-25 trips	26-50 trips	51-100 trips
2003	421	209	101	80	27	4
2004	506	187	72	159	80	23
2005	511	144	84	172	80	40
2006	520	151	90	173	81	39
2007	522	137	85	160	88	63
2008	499	147	74	171	86	45
2009	504	138	99	141	94	49
2010	490	138	60	156	96	69
2011	494	112	50	147	112	91
2012	464	110	43	140	117	72
2013	401	106	45	113	96	67
2014	401	95	59	113	93	63
2015	384	92	52	112	75	67
2016	372	88	60	106	88	52
2017	374	96	60	103	89	61
2018	264	100	54	66	48	15

Table 8. Number of vessels by number of trips landing wings

FY	Total Vessels	5 or fewer trips	6-10 trips	11-25 trips	26-50 trips	>50 trips
2003	421	209	101	80	27	4
2004	502	175	71	157	80	19
2005	499	137	80	166	79	37
2006	518	141	88	172	79	38
2007	516	130	82	156	87	61
2008	490	135	71	163	81	40
2009	502	131	95	139	93	44
2010	475	118	56	145	91	65
2011	486	101	46	144	109	86
2012	455	102	41	136	112	64
2013	390	90	44	104	93	59
2014	385	78	54	107	89	57
2015	372	85	50	107	68	62
2016	358	79	58	93	82	46
2017	365	77	52	96	84	56
2018	254	92	48	62	39	13

Table 9. Number of vessels by number of trips landing bait

FY	Total Vessels	5 or fewer trips	6-10 trips	11-25 trips	26-50 trips	>50 trips
2003						
2004	22	14	c	c		5
2005	24	8	c	6	c	5
2006	25	14	c	4	c	3
2007	25	9	c	6	c	5
2008	40	14	4	9	5	8
2009	24	10	4	c	c	6
2010	54	24	4	12	6	8
2011	36	10	4	6	6	10
2012	30	6	c	c	7	10
2013	41	16	c	9	c	11
2014	38	12	5	7	5	9
2015	33	6	4	7	8	8
2016	38	c	c	13	8	8
2017	56	20	8	12	8	8
2018	28	6	c	4	10	c

C = confidential; blank cells are zeros/no data.

2.1.1.4 Fishery Revenue

Since FY 2010, skate revenue has been \$5.5-\$9.3M annually (Table 10. Skate revenue relative to all revenue from active skate vessels, FY 2010-2018.), generally under 1% of the total revenue by vessels landing skates. However, dependence by individual vessels may be much higher. The fluctuations in total skate revenue is largely attributable to changes in wing revenue and landings, ranging from \$4.3-7.8M annually (Table 11). Revenue from the skate bait fishery has been relatively stable, ranging from \$1.1-1.7M annually.

Table 10. Skate revenue relative to all revenue from active skate vessels, FY 2010-2018.

FY	Skate revenue	All Revenue	% Skate
2010	\$6,318,464	\$715,310,895	0.88%
2011	\$9,339,118	\$762,544,626	1.22%
2012	\$7,554,998	\$1,108,349,868	0.68%
2013	\$7,663,276	\$1,196,147,917	0.64%
2014	\$9,302,431	\$1,163,812,409	0.80%
2015	\$6,299,493	\$877,965,629	0.72%
2016	\$5,518,025	\$1,390,180,366	0.40%
2017	\$6,422,540	\$1,840,542,864	0.35%
2018	\$7,552,175	\$1,029,229,702	0.73%

Table 11. Skate wing and bait landings and revenue, FY 2010 – 2018.

Fishing Year	WING			BAIT		
	Landings		Revenue (\$)	Landings		Revenue (\$)
	Live lb.	Landed lb.		Live lb.	Landed lb.	
2010	23,000,058	11,200,786	\$5,137,637	9,698,695	9,365,792	\$1,161,331
2011	30,465,414	14,465,048	\$7,626,898	10,837,172	10,818,390	\$1,711,431
2012	22,427,119	10,552,047	\$6,163,933	10,766,626	10,754,534	\$1,391,065
2013	19,720,311	9,352,410	\$6,394,396	11,176,451	11,176,413	\$1,199,273
2014	24,704,030	11,673,430	\$7,830,322	9,386,666	9,375,820	\$1,161,520
2015	22,943,092	11,660,851	\$5,141,071	10,513,990	10,508,860	\$1,091,415
2016	20,228,685	10,347,571	\$4,323,596	10,148,571	10,184,091	\$1,120,607
2017	20,057,874	10,097,647	\$4,713,440	12,495,542	12,960,835	\$1,653,560
2018	21,164,021	10,414,699	\$5,904,030	10,625,319	11,033,972	\$1,544,838

2.1.1.5 Dependence on Skates

Wing. During FY 2016, there were 361 vessels landing skate wings (Table 12). Of these, 307 vessels earned less than 10% of their fishing revenue from skate wings. The other 54 vessels earned from just over 10% to just under 50% of their revenues from skate wings. This is typical of other recent fishing years. The 54 vessels with higher dependence have higher dependence on other species; only about 27% of their total fishing revenue was from skate wings. The low percentage group, 307 vessels, has a very low dependence on skate for food (<1%). Both groups have no revenue from skate bait.

Table 12. Skate vessels by dependence on wing revenue, FY 2016

Number of vessels	Total revenue	Bait revenue	Bait percent of Total revenue	Food revenue	Food percent of Total revenue
307	\$162,888,154	\$0	\$0	\$1,281,459	%0.79
54	\$9,231,589	\$0	\$0	\$2,467,240	%27

Source: CFDBS, at the Northeast Fisheries Science Center.

Bait. There were 47 vessels landing skate as bait in FY 2016 (Table 13). Of these, 38 vessels earned less than 10% of their fishing revenue from skate bait. The other nine vessels earned from just under 30 % to nearly 100% of their revenues from skate bait. This is typical of other recent fishing years. The nine vessels with higher dependence have lower dependence on other species, although it is more than half for this group. The low percentage group, 38 vessels, has a higher amount of skate for food than for bait, while the nine vessels in the high group have a very low amount of revenue from food.

Table 13. Skate vessels by dependence on bait revenue, FY 2016

Number of vessels	Total revenue	Bait revenue	Bait percent of Total revenue	Food revenue	Food percent of Total revenue
38	\$8,537,371	\$152,030	1.8%	\$219,994	2.6%
9	\$2,121,926	\$961,711	45%	\$26,510	1.3%

Source: CFDBS, at the Northeast Fisheries Science Center.

2.1.1.6 Market and Substitute Goods

[Should add in uses as bait by lobster fishery (also uses herring and other), uses as food. Some content is in Sect. 2.1.3.1]

2.1.1.7 Skate Dealers and Processors

[Should add in number of dealers over time. Where they are located. Are dealers of bait and wing the same?]

2.1.2 Recreational Skate Fishery

Skates have little to no recreational value and are not directed on in any recreational fisheries. Between 2010 and 2018, recreational skate catch has fluctuated, with a high of 307,907 lb (140 mt) in 2015 (Table 14). Landings by species varied by region. Refer to the MRIP website for these data:

<http://www.st.nmfs.noaa.gov/st1/recreational/queries/>.

Reliability of skate recreational catch estimates from MRFSS is a concern. Total catch estimates (A+B1+B2), however, appear to be more reliable than harvest estimates (A+B1 only). Most skates caught by recreational anglers are assumed to be released alive, though there may be post-release mortality caused by hooking and handling. Since skates are not a valuable or heavily fished recreational species, the

number of MRFSS intercepts from which these estimates are derived is likely to have been very low. The fewer intercepts from which to extrapolate total catch estimates there are, the less reliable the total catch estimates will be.

Table 14. Estimated recreational skate harvest (lb) by species, 2012-2018 (A+B1).

	Winter	Clearnose	Little	Total
2012	2,184	115,168	0	117,352
2013	854	88,419	110,771	200,044
2014	82	35,279	213,091	248,452
2015	102,979	162,808	42,120	307,907
2016	52,233	215,191	414	267,838
2017	4,248	42,008	30,077	76,333
2018	1,631	246,633	89	248,353

Source: NMFS/MRIP (PSE >50 for all values indicating imprecise estimates)
<http://www.st.nmfs.noaa.gov/recreational-fisheries/access-data/run-a-data-query/index>
Note: Species not listed have no reported harvest.

2.1.3 Other Managed Resources and Fisheries

In addition to skates, other fisheries could be impacted by the Alternatives under Consideration. The groundfish and monkfish fisheries are often prosecuted in conjunction with skates and the lobster fishery is dependent on skate as bait.

2.1.3.1 American Lobster Fishery

Population status: The 2015 peer-reviewed stock assessment report (ASMFC 2015) indicated a mixed picture of the American lobster resource. The assessment found the GOM/GBK stock was experiencing record stock abundance and recruitment (not overfished, not experiencing overfishing), though population indicators show young-of-year estimates are trending downward. This indicates a potential decline in recruitment in the coming years, and the Panel recommended that the ASMFC be prepared to impose restrictions should recruitment decline. Conversely, the assessment found the SNE stock is severely depleted, though overfishing was not occurring, with abundance indices at or near time-series lows. Recruitment indices show the stock has continued to decline and is in recruitment failure.

Management: Lobster is jointly managed, by the Atlantic States Marine Fisheries Commission in state waters (0-3 nm from shore) and by NMFS in federal waters (3-200 mi from shore). The fishery occurs within the three stock units: Gulf of Maine, Georges Bank, and Southern New England, each with an inshore and offshore component. The fishery is managed using minimum and maximum carapace length; limits on the number and configuration of traps; possession prohibitions on egg-bearing (berried) and v-notched female lobsters, lobster meat, or lobster parts; prohibitions on spearing lobsters; and limits on non-trap landings and entry into the fishery (ASMFC 2015). The most recent addendum, Addendum XVIII, reduces trap allocations by 50% for LCMA 2 and 25% for LCMA 3.

Fishery: The American lobster fishery has seen incredible expansion in effort and landings over the last 40 years and is now one of the top fisheries on the U.S. Atlantic coast. In the 1920s, lobster landings were about 11M lb. Landings were stable from 1950 to 1975, around 30M pounds; however, from 1976 to 2008, landings tripled, reaching 92M pounds in 2006. Landings continued to increase and peaked in 2013 at over 150M pounds. Landings leveled off but remained high at 147M pounds in both 2014 and 2015 (Table 15), but again jumped to over 158M pounds (over \$660 M) in 2016. Recently, most landings have been attributed to Maine (83%) and Massachusetts (11%). Landings, in descending order, also occurred in

New Hampshire, Rhode Island, New Jersey, Connecticut, New York, Maryland, Delaware, and Virginia (ASMFC 2018).

Table 15. Total lobster landings (lb) by state, 2009-2015

	ME	NH	MA	RI	CT	NY	NJ + south ^a	Total
2009	81,175,847	2,985,166	11,781,490	3,174,618	451,156	731,811	238,267	100,538,355
2010	95,506,383	3,658,894	12,768,448	3,258,221	432,491	813,513	692,480	117,130,430
2011	104,693,316	3,917,461	13,717,192	2,513,255	191,594	344,232	689,000	126,066,050
2012	125,759,424	4,236,740	14,917,238	2,932,388	236,846	275,220	978,767	149,336,623
2013	127,773,264	3,822,844	15,738,792	2,149,266	133,008	248,267	756,494	150,621,935
2014	124,440,799	4,939,310	15,060,352	2,387,321	141,988	216,630	619,565	147,805,965
2015	122,212,133	4,716,084	16,418,796	2,879,874	158,354	146,624	505,985	147,037,850
Average	111,651,595 (83%)	4,039,500 (3.0%)	14,343,187 (11%)	2,756,420 (2.1%)	249,348 (0.19%)	396,614 (0.30%)	640,080 (0.48%)	134,076,744 (100%)

Source: ASMFC lobster data warehouse (M. Cieri, pers. comm., 2017).

^a "South" includes Delaware, Maryland and Virginia.

In Maine, the fishery is most active during the months of July to November. For the years 2004-2016, about 85% of the pounds landed were landed in those months (**Error! Reference source not found.**). Just 4% of landings occurred in the months of January to April (www.maine.gov).

There was an average of 8,315 vessels issued commercial lobster permits for the fishery in state waters each year from 2009 to 2013, and 3,080 vessels were issued federal permits, though in most cases, a vessel holding a federal permit also holds a state permit. Thus, there are about 8,300 vessels in the lobster fishery. The State of Maine has issued the largest number of state permits, recently averaging 5,163 (62%). For Maine, about 85% of the permits are active (~4,400). For New Hampshire, about 70% of the permits issued were active during 2009-2013 ASMFC (2015).

Reliance on skate as bait: The Maine lobster industry is particularly dependent on herring as a bait source, though it depends on price and availability. South of Massachusetts, lobstermen tend to use skate or other bait, as herring tends to break down in warmer water. For lobstermen surveyed in 2010 from Maine, New Hampshire and Massachusetts who harvest in Lobster Conservation Management Area A (inshore Gulf of Maine), skates was likely a minor bait source (Table 16).

Table 16. Bait use in the inshore Gulf of Maine lobster fishery, in 2010

	Maine							NH	MA
	Zone A	Zone B	Zone C	Zone D	Zone E	Zone F	Zone G		
Herring	90%	86%	73%	73%	84%	37%	75%	60%	76%
Pogies	3%	2%	0%	15%	14%	39%	11%	4%	13%
Redfish	1%	8%	12%	4%	1%	19%	8%	0%	0%
Racks	1%	2%	1%	2%	0%	1%	1%	26%	6%
Alewives	1%	1%	0%	1%	0%	0%	0%	0%	0%
Other	4%	2%	13%	5%	0%	4%	4%	9%	4%

Source: Dayton et al. (2014).

"Racks" are the skeletal remains of fish.

2.1.3.2 Large Mesh Multispecies (Groundfish)

The overall trend since the start of sector management through 2014 has been a decline in groundfish landings and revenue (\$55M in FY2014) and the number of vessels with revenue from at least one groundfish trip (273 in FY2014). The groundfish fishery has had a diverse fleet of vessel sizes and gear types. Over the years, as vessels entered and exited the fishery, the typical characteristics defining the fleet changed as well. The decline in active vessels has occurred across all vessel size categories. Since FY2009, the 30' to < 50' vessel size category, which has the largest number of active groundfish vessels, experienced a decline from 305 to 145 active vessels. The <30' vessel size category, containing the least number of active groundfish vessels, experienced the largest reduction since FY2009 (34 to 14 vessels; Murphy *et al.* 2015; NEFMC 2017).

2.1.3.3 Monkfish

Life History. Monkfish, *Lophius americanus*, (i.e., “goosefish”), occur in the western North Atlantic from the Grand Banks and northern Gulf of St. Lawrence south to Cape Hatteras, North Carolina. Monkfish occur from inshore areas to depths of at least 2,953 ft (900 m). Monkfish undergo seasonal onshore-offshore migrations, which may relate to spawning or possibly to food availability. Female monkfish begin to mature at age 4 with 50% of females maturing by age 5 (~17 in [43 cm]). Males generally mature at slightly younger ages and smaller sizes (50% maturity at age 4.2 or 14 in [36 cm]). Spawning takes place from spring through early autumn. It progresses from south to north, with most spawning occurring during the spring and early summer. Females lay a buoyant egg raft or veil that can be as large as 39 ft (12 m) long and 5 ft (1.5 m) wide, and only a few mm thick. The larvae hatch after 1 - 3 weeks, depending on water temperature. The larvae and juveniles spend several months in a pelagic phase before settling to a benthic existence at a size of ~3 in (8 cm; NEFSC 2011).

Population and Management Status. NMFS implemented the Monkfish FMP in 1999 (NEFMC & MAFMC 1998) and the fishery is jointly managed by the NEFMC and MAFMC. The FMP included measures to stop overfishing and rebuild the stocks through several measures. These measures included:

- Limiting the number of vessels with access to the fishery and allocating DAS to those vessels;
- Setting trip limits for vessels fishing for monkfish; minimum fish size limits;
- Gear restrictions;
- Mandatory time out of the fishery during the spawning season; and
- A framework adjustment process.

The Monkfish FMP defines two management areas for monkfish (northern and southern), divided roughly by an east-west line bisecting Georges Bank. As of 2013 data, monkfish in both management areas are not overfished and overfishing is not occurring (NEFSC 2013). Operational assessments for monkfish were conducted in 2016 and 2019, but it was recommended that stock status not be updated during these data updates due to a lack of biological reference points (NEFSC 2020; Richards 2016). According to the 2019 assessment, strong recruitment in 2015 fueled an increase in stock biomass in 2016-2018, though abundance has since declined as recruitment returned to average levels. Biomass increases were greater in the northern area than in the southern area, and biomass has declined somewhat in the south, as abundance of the 2015 year class declined. In the north, landings and catch have fluctuated around a steady level since 2009, but increased after 2015, with discards increasing only slightly. In the south, landings and catch had been declining since around 2000, but catch increased after 2015 due to discarding of a strong 2015 year class, with almost a doubling of the discard rate.

2.1.4 Fishing Communities

Consideration of the economic and social impacts on fishing communities from proposed fishery regulations is required under the National Environmental Policy Act (NEPA) and the Magnuson Stevens Fishery Conservation and Management Act, particularly, National Standard 8 which defines a “fishing community” as “a community which is substantially dependent on or substantially engaged in the harvesting or processing of fishery resources to meet social and economic needs, and includes fishing vessel owners, operators, and crew and United States fish processors that are based in such community” (16 U.S.C. § 1802(17)).

Determining which fishing communities are “substantially dependent” on, and “substantially engaged” in, the skate fishery can be difficult. Because skates are widely used as bait for the lobster fishery, it is impractical to identify every community with substantial involvement in the lobster fishery (and consequently some dependence on the skate fishery) for assessment in this document.

2.1.4.1 Skate Fishery

There are over 400 communities that have been a homeport or landing port to one or more active Northeast skate vessels since 2010. These ports occur throughout the coastal northeast and mid-Atlantic, primarily from Maine to New Jersey. The level of activity in the skate fishery has varied across time. This section identifies the communities for which skates are particularly important. While the involvement of communities in the skate fishery is described, individual vessel participation may vary. Communities dependent on the skate resource are categorized into primary and secondary port groups. Metrics were calculated using the annual average over a recent nine-year period for which landings data are available, here (FY 2010-2018). Because geographical shifts in the distribution of Northeast skate fishing activity have occurred, the characterization of some ports as “primary” or “secondary” may not reflect their historical participation in and dependence on the skate fishery.

Primary Port Criteria. The skate fishery primary ports are those that are substantially engaged in the fishery, and which are likely to be the most impacted by the alternatives under consideration. The primary ports meet the following criteria:

1. At least \$1M average annual revenue of skates during 2010-2018 (Table 19), and/or
2. A ranking of high for engagement in and reliance on the skate fishery on average in 2014-2018 according to the NMFS Community Vulnerability Indicators (Table 18).

Secondary Port Criteria. The skate fishery secondary ports are those that may not be as dependent or engaged in the fishery as the primary ports but are involved to a lesser extent. Because of the size and diversity of the skate fishery, it is unpractical to examine each secondary port individually. However, they are listed here to provide a broader scope of potential communities impacted by skate management measures. The secondary ports meet the following criterion:

1. At least \$100,000 average annual revenue of skates, 2010-2018, and/or
2. A ranking of at least medium-high for engagement in or reliance on the skate fishery on average in 2014-2018 according to the NMFS Community Vulnerability Indicators (Table 18).

Engagement in and reliance on the Northeast skate fishery: The NMFS Community Vulnerability Indicators give a broader view of the degree of involvement of communities in fisheries than simply using pounds or revenue of landed fish (Jepson & Colburn 2013). The indicators portray the importance or level of dependence of commercial or recreational fishing to coastal communities and are used to help identify

primary ports for the skate fishery. The degree of engagement in or reliance on the skate fishery is based on multiple sources of information, averaged over five-year time periods, using NMFS dealer and U.S. Census data.

- *The engagement index* incorporates the pounds and value of landed skates, the number of Northeast skate commercial fishing permits with that community identified as the homeport, and the number of skate dealers buying fish in that community.
- *The reliance index* is a per capita measure using the same data as the engagement index but divided by total population of the community.

Using a principal component and single solution factor analysis, each community receives a factor score, which is translated into a ranking of low, medium, medium-high, or high. A score of 1.0 or more places the community at 1 standard deviation above the mean (or average) and is considered highly engaged or reliant. Communities with scores of 0.0-0.49 have low engagement. More information about the indicators may be found at: <http://www.st.nmfs.noaa.gov/humandimensions/social-indicators/index>

The indicators reveal that there are over 480 communities that have a skate fishery engagement and reliance index in the range of low to high. Reported in Table 18 are the 29 communities that have a ranking of at least medium-high for either engagement or reliance.

Primary and Secondary Ports. Based on these criteria, there are eight primary ports in the Northeast skate fishery (Table 19). Of these, the highest revenue ports are Chatham and New Bedford, Massachusetts and Point Judith, Rhode Island (Table 17). There are 21 secondary ports from Massachusetts to North Carolina. The primary and secondary ports comprised 72% and 24% of total fishery revenue, respectively, during 2010-2018. There are 87 other ports that have had more minor participation (4%) in the fishery recently.

Table 17. Fishing revenue (unadjusted for inflation) and vessels in primary and secondary skate ports, for calendar years 2010-2018.

Port	Average revenue, 2010-2018			Total active skate vessels, 2010-2018
	All fisheries	Skates only	% Skates	
Chatham, MA	\$11,724,737	\$1,704,647	15%	59
Point Judith, RI	\$45,995,459	\$1,294,973	2.8%	167
New Bedford, MA	\$359,807,372	\$1,229,694	0.3%	178
Newport, RI	\$8,310,603	\$411,274	4.9%	25
Little Compton, RI	\$2,345,325	\$280,600	12%	30
Long Beach, NJ	\$26,247,037	\$247,347	0.9%	59
Montauk, NY	\$17,262,945	\$230,299	1.3%	106
New London, CT	\$5,030,350	\$226,059	4.5%	30
Pt. Pleasant, NJ	\$26,975,369	\$175,347	0.7%	96
Sea Isle City, NJ	\$879,404	\$161,499	18%	5
Gloucester, MA	\$47,936,941	\$155,971	0.3%	152
Stonington, CT	\$7,241,146	\$136,587	1.9%	33
Hampton Bay, NY	\$5,777,526	\$133,139	2.3%	59
Westport, MA	\$1,427,621	\$101,323	7.1%	10
Other (n=103)	\$290,196,969	\$582,207	0.2%	
Total	\$857,158,805	\$7,070,932	0.8%	

Source: NMFS Commercial Fisheries Database, accessed September 2019.

Of the primary ports, Chatham had the highest average revenue between 2010 and 2018, \$1.7M, or 15% of total revenue in Chatham for all fisheries (Table 17). There were 59 active skate vessels during that time. Point Judith and New Bedford each had an average over \$1.2M. The percent of total revenue was lower, just 0.3% and 2.8%, respectively. However, a much larger number of skate vessels landed in these ports, 167 and 178, respectively. Thus, although these three ports are important for the skate fishery, other fisheries dominate their overall fishing activity. For most of the secondary ports, the percent revenue from skates is also very low, from 0.3-12%, except for Sea Isle City, New Jersey (18%). Montauk, New York and Gloucester, Massachusetts had 106 and 152 active skate vessels during 2010-2018, higher than the other secondary ports, 5-96. Primary ports are further described in Framework 8. Community profiles are available from the NEFSC Social Sciences Branch website (Clay *et al.* 2007).

Table 18. Skate fishing community engagement and reliance indicators, 2014-2018 average

State	Community	Community Index	
		Engagement 2014-2018	Reliance 2014-2018
ME	Monhegan	Low	High
	Portland	Medium-High	Low
MA	Gloucester	High	Medium
	Boston	Medium-High	Low
	Scituate	Medium-High	Low
	Chatham	High	High
	Harwichport	Medium-High	Medium-High
	Woods Hole	Medium	Medium-High
	New Bedford	High	Medium
	Westport	High	Medium
	Chilmark	Medium	High
RI	Little Compton	High	High
	Newport	High	Medium
	Narragansett/Pt. Judith	High	High
CT	Stonington/Mystic/Pawcatuc	High	Medium
	New London	High	Medium
NY	Montauk	High	High
	Amagansett	Medium	High
	Wainscott	Low	Medium-High
	Hampton Bays/Shinnecock	High	Medium-High
	Oak Beach-Captree	Low	High
NJ	Belford	High	High
	Point Pleasant	High	Medium
	Barnegat Light/Long Beach	High	High
	Cape May	High	High
MD	Ocean City	Medium-High	Medium
VA	Newport News	Medium-High	Low
NC	Wanchese	Medium-High	Medium-High

Notes: This list includes those communities that have a ranking of at least medium-high for engagement or reliance.
Source: <http://www.st.nmfs.noaa.gov/humandimensions/social-indicators/index>.

Table 19. Primary and secondary ports in the Northeast skate fishery

State	Port	Average revenue, 2010-2018		Indicator		Primary/Secondary
		>\$100K	>\$1M	Med-High	High	
ME	Monhegan			√		Secondary
	Portland			√		Secondary
MA	Gloucester	√		√		Secondary
	Boston			√		Secondary
	Scituate			√		Secondary
	Chatham	√	√		√	Primary
	Harwichport			√		Secondary
	Woods Hole			√		Secondary
	New Bedford	√	√		√	Primary
	Westport	√		√		Secondary
	Chilmark			√		Secondary
	RI	Little Compton	√			√
Newport		√		√		Secondary
Narragansett/Point Judith		√	√		√	Primary
CT	Stonington/Mystic/Pawcatuck	√		√		Secondary
	New London	√		√		Secondary
NY	Montauk	√			√	Primary
	Amagansett			√		Secondary
	Wainscott			√		Secondary
	Hampton Bays/ Shinnecock	√		√		Secondary
	Oak Beach - Captree			√		Secondary
NJ	Belford				√	Primary
	Point Pleasant	√		√		Secondary
	Barneгат Light/Long Beach	√			√	Primary
	Sea Isle City	√				Secondary
	Cape May				√	Primary
MD	Ocean City			√		Secondary
VA	Newport News			√		Secondary
NC	Wanchese			√		Secondary

Table 20. Changes in engagement over time (all primary and secondary ports, plus any port with Medium-High or High over time series)

State	Community	Engagement Index			
		2004-2008	2009-2013	2014-2018	2018 only
ME	Monhegan	Low	Low	Low	Low
	Portland	Med.-High	Med.-High	Med.-High	Medium-
NH	Portsmouth	Med.-High	Med.-High	Low	Low
MA	Gloucester	High	High	High	High
	Boston	High	High	Med.-	Med.-High
	Scituate	High	High	Med.-High	Med.-High
	Marshfield	Med.-High	Medium	Medium	Medium
	Plymouth	Med.-High	Medium	Medium	Medium
	Provincetown	High	Med.-High	Medium	Medium
	Chatham	High	High	High	High
	Harwichport	Medium	Medium	Med.-High	Medium
	Woods Hole	Medium	Medium	Medium	Medium
	Fall River	Medium	High	Low	Low
	New Bedford	High	High	High	High
	Westport	Med.-High	Med.-High	High	Med.-High
	Chilmark	Low	Medium	Medium	Medium
RI	Tiverton	High	Medium	Medium	Medium
	Little Compton	High	High	High	High
	Newport	High	High	High	High
	Narragansett/Pt. Judith	High	High	High	High
CT	Stonington/Mystic/Pawcatuck	Med.-High	Medium	High	High
	New London	Medium	High	High	High
NY	Mattituck	Med.-High	Med.-High	Medium	Medium
	Montauk	High	High	High	High
	Amagansett	Medium	Medium	Medium	Medium
	Wainscott	Medium	Low	Low	Low
	Hampton Bays/Shinnecock	High	High	High	High
	Oak Beach-Captree	Low	Low	Low	Low
NJ	Belford	Med.-High	Med.-High	High	High
	Point Pleasant	High	High	High	High
	Barneget Light/Long Beach	High	High	High	High
	Cape May	High	High	High	High
MD	Ocean City	Med.-High	Med.-High	Med.-High	Med.-High
VA	Newport News	Medium	Medium	Med.-High	Med.-High
NC	Wanchese	Medium	Med.-High	Med.-High	Medium

Notes: This list includes those communities that have a ranking of at least medium-high for engagement or reliance.
Source: <http://www.st.nmfs.noaa.gov/humandimensions/social-indicators/index>.

2.1.4.1.1 Ports by fishery (wing and bait)

Wing fishery: During 2010-2018, skate wings (food) were landed in over 115 ports. Skate wing revenue was highest in Chatham and New Bedford, MA; and Point Judith and Little Compton, RI during that time (Table 21). In 2018, the top wing ports were Chatham and New Bedford, MA; Point Judith, RI, and Point Pleasant, NJ. The total skate wing revenue for 2018 (\$5.6M) was slightly lower than the average for 2010-2018 (\$5.8M). The top port for skate wing revenue has been Chatham, averaging \$1.7M for 2010-2018, accounting for 29% of wing revenue. The second highest port for skate wings is now Point Judith, but the revenue in 2018 (\$539K) was down 27% from the nine-year average (\$741K).

Trawl and gillnet vessels land skate wings. Some trawlers target skate; others catching skate as bycatch. Most of the gillnet vessels targeting skate are based largely in Chatham but also in New Bedford. There is a very small skate wing fleet in Virginia, though it has dramatically declined in recent years. Most of these are monkfish gillnets though some draggers caught skate as bycatch at the height of the fishery.

Bait fishery: During 2010-2018, skate bait was landed in over 35 ports with bait revenue highest in Point Judith and Newport, RI during that time (Table 21). In 2018, the top bait ports Point Judith, RI, and New London, CT. The total skate bait revenue for 2018 (\$1.4M) was slightly higher than the average for 2010-2018 (\$1.3M). The top port for skate bait revenue has been Point Judith, RI, averaging \$554K for 2010-2018, accounting for 43% of bait revenue. The second highest port for skate wings is now New London, CT, with revenue in 2018 (\$280K) up 204% from the nine-year average (\$137K). These revenues are those reported by Federal dealers. Ports such as Montauk, NY have individual vessels which sell skate directly to lobster and other pot fishermen for bait.

Table 21. Skate revenue by disposition and port, for calendar years 2010-2018.

Port	Average 2010-2018	2018 only
Wing (food)	\$5,779,373	\$5,617,183
Chatham, MA	\$1,689,116	\$2,793,625
New Bedford, MA	\$1,194,233	\$467,668
Point Judith, RI	\$740,775	\$538,917
Little Compton, RI	\$280,600	\$173,131
Barnegat Light, NJ	\$241,332	\$202,637
Montauk, NY	\$230,277	\$246,397
Newport, RI	\$181,871	\$126,719
Point Pleasant, NJ	\$174,092	\$275,422
Gloucester, MA	\$133,104	\$82,331
Hampton Bay, NY	\$154,923	\$119,707
Stonington, CT	\$124,995	\$126,753
Westport, RI	\$100,355	\$55,057
<i>Other Ports (n=104)</i>	<i>\$533,701</i>	<i>\$408,819</i>
Bait	\$1,291,559	\$1,403,155
Point Judith, RI	\$554,199	\$714,467
Newport, RI	\$229,402	\$144,862
Sea Isle City, NJ	\$148,630	\$0
New London, CT	\$137,160	\$280,434
<i>Other Ports (n=32)</i>	<i>\$222,168</i>	<i>\$263,392</i>
Grand Total	\$7,070,932	\$7,020,338

2.1.4.1.2 Fishery by states

During 2010-2018, skates were landed in ten states, with the most landings occurring in Massachusetts and Rhode Island (Table 22). The bait fishery is primarily located in Rhode Island, while the wing fishery is primarily located in Massachusetts. The skate fishery is a small contribution (0.0-2.8%) to overall fishing revenue to these ten states.

Table 22. Total skate landings and revenue by fishery and state, calendar year 2010-2018.

	Average revenue 2010-2018				
	Skates			All fisheries	% skates
	Bait	Food	Total		
ME	\$72	\$1,245	\$1,316	\$305,515,928	0.0%
NH	\$5,737	\$12,477	\$18,214	\$25,595,733	0.1%
MA	\$139,232	\$3,304,615	\$3,443,847	\$502,369,095	0.7%
RI	\$785,590	\$1,221,570	\$2,007,160	\$71,733,848	2.8%
CT	\$155,177	\$229,162	\$384,338	\$14,564,035	2.6%
NY	\$156	\$416,687	\$416,843	\$27,840,035	1.5%
NJ	\$204,560	\$494,964	\$699,524	\$159,086,127	0.4%
MD	\$601	\$21,258	\$21,859	\$7,065,590	0.3%
VA	\$435	\$71,943	\$72,378	\$60,801,601	0.1%
NC	\$0	\$5,345	\$5,345	\$18,558,375	0.0%

2.1.4.2 Other Fisheries

[Section needs updating]

There are several other fisheries, as well as the ecotourism industry, that are potentially impacted by this action. Summarized below are the key port communities that are important to each of these fisheries, as identified by the lead management entity for each. Where the management entity has not previously identified the relevant communities, a method was developed through this action and explained below. Many ports have coexisting fisheries, including the skate fishery. In all, about 140 communities have been identified as potentially impacted (Table 24. Primary and secondary port communities for the skate fishery and other fisheries/industries potentially impacted by Amendment 5, Maine to New Jersey.).

American Lobster: The American lobster fishery is the primary end user of skate bait. American lobster is landed in many port communities on the Atlantic coast. The ASMFC does not identify key ports in the FMP for this fishery. In 2015, 18 of the top 20 ports for lobster landed value were in Maine (primarily midcoast to eastern Maine), and two were in Massachusetts (Table 23. Top 20 landing ports by lobster revenue, 2015, Maine to New Jersey.). For purposes of this action, these 20 top ports are considered the primary lobster ports. In 2015, there were also 2,297 federal lobster licenses issued to vessels from 279 home ports (15 states) and 273 primary landing ports (12 states). Of these, there were 63 ports that were either the home port or primary landing port to at least 10 federal lobster vessels (Table 24. Primary and secondary port communities for the skate fishery and other fisheries/industries potentially impacted by Amendment 5, Maine to New Jersey.), and these are considered secondary ports here. Since about 8,000 state waters-only lobster licenses are issued annually, many more ports likely have over 10 lobster licenses issued per port. Section 2.1.3.1 contains more information about the lobster fishery.

Commercial Groundfish: Skates are important to groundfish as a prey item in the ecosystem as well; it is a bait source for a very minor subset of the commercial fishery (more important for recreational bait). There are over 400 communities that have been the homeport or landing port to one or more commercial Northeast groundfish fishing vessels since 2008. Of these, 10 ports have been identified as primary commercial groundfish port communities (and 22 secondary ports), based on the level of commercial groundfish activity in the port (Table 24. Primary and secondary port communities for the skate fishery

and other fisheries/industries potentially impacted by Amendment 5, Maine to New Jersey.). Primary ports have, during FY 2009-FY 2013, at least \$100,000 average annual revenue (for all species, not just groundfish) and are in the top ten ranking in regional quotient or local quotient (confidential ports excluded). For purposes of this action, these 10 top ports are considered the primary commercial groundfish ports. Secondary ports are in the top 11-30 ranking in regional or local quotient (same revenue threshold; NEFMC 2017). Section 2.1.3.2 contains more information about the groundfish fishery.

Table 23. Top 20 landing ports by lobster revenue, 2015, Maine to New Jersey.

State	Port	Top 20 landing port for lobster revenue		
		Revenue	# of vessels	# of dealers
ME	Jonesport	\$9.8M	178	6
	Beals	\$20M	234	5
	Milbridge	\$11M	76	13
	Steuben	\$9.4M	71	11
	Winter Harbor	\$8.4M	39	3
	Southwest Harbor	\$11M	109	8
	Bass Harbor	\$11M	91	7
	Swans Island	\$11M	93	4
	Stonington	\$62M	367	10
	Rockland	\$13M	163	4
	Vinalhaven	\$39M	222	12
	Owls Head	\$10M	71	4
	S. Thomaston/Spruce Head	\$17M	130	10
	Port Clyde	\$10M	103	10
	Tenants Harbor	\$9.7M	92	11
	Cushing	\$9.1M	68	9
	Friendship	\$21M	165	10
Portland	\$17M	230	21	
MA	Gloucester	\$16M	202	24
	New Bedford/Fairhaven	\$8.3M	91	22
<i>Source: ACCSP, Aug.2017</i>				

Monkfish: ???

Table 24. Primary and secondary port communities for the skate fishery and other fisheries/industries potentially impacted by Amendment 5, Maine to New Jersey.

[Plan to build a table like this summarizing the ports important to the fisheries. Helps identify where fisheries intersect. See Herring Amendment 8 for example.]

State	Port	Skate	Lobster	Groundfish	Monkfish
???	???		L		
???	???	S		G*	M
???	???		L		
???	???	S*	L*		M

2.1.4.3 Port Descriptions

[Needs updating and descriptions of other ports]

Described here are the fishing communities that are primary ports for the skate fishery. Information in this section is largely based on demographic data collected by the U.S. Census and fishery data collected by NMFS, much of which are available on the NEFSC website (NEFSC 2017). Clay *et al.* (2007) has a detailed profile of each port, including important social and demographic information.

Chatham, Massachusetts

General: Chatham is a fishing community in Barnstable County, Massachusetts. In 2016, the town of Chatham had a population of 6,142, a 0.3% increase from the year 2010 (6,125). In 2012-2016, 5.8% of the civilian employed population aged 16 years and over worked in agriculture, forestry, fishing, hunting, and mining occupations in Chatham; the poverty rate was 12.7%; and the population was 91% white, non-Hispanic (US Census 2018). The commercial fishing engagement and reliance indices for Chatham are high and high, respectively (Jepson & Colburn 2013).

In 2016, total landings in Chatham were valued at \$18M, 3% of the state-wide total (\$608M). The top five species landed by value included spiny dogfish, American lobster, sea scallops, and oysters (\$9.5M), comprising 53% of that total (Table 25). Of those, spiny dogfish was the highest valued species, at \$3.1M, or 17% of total landings, landed by 47 vessels and sold to 4 dealers (dealer data). In 2016, Chatham was the homeport or primary landing port for 107 and 116 Federal fishing permits (i.e., vessels), respectively (GARFO 2019). The Chatham Fish Pier is an active offloading facility in Chatham. The Cape Cod Community Supported Fishery is based in West Chatham.

Skate fishery: see above.

Table 25. Top five species landed by value in Chatham MA, 2016

Species	Nominal revenue (\$)	Vessels	Dealers
Spiny dogfish	\$3.1M	47	4
American lobster	\$3.0M	37	13
Sea scallops	\$2.0M	22	8
Oysters	\$1.4M	3	6

Note: Data for one of the five top species landed are confidential.
Source: Dealer data, as of June 8, 2018.

New Bedford, Massachusetts

General: New Bedford is a fishing community in Bristol County, Massachusetts. In 2016, New Bedford had a population of 94,988, a 0.1% decrease from the year 2010 (95,072). In 2012-2016, 2% of the civilian employed population aged 16 years and over worked in agriculture, forestry, fishing, hunting, and mining occupations in New Bedford; the poverty rate was 23.5%; and the population was 65% white, non-Hispanic, 19% Hispanic or Latino, and 6% Black or African American alone (US Census 2018). The commercial fishing engagement and reliance indices for New Bedford are high and medium, respectively (Jepson & Colburn 2013).

In 2016, total landings in New Bedford were valued at \$343M, 64% of the state-wide total (\$608M). The top five species landed by value included sea scallops, Atlantic surfclams, American lobster, and winter flounder (Table 26), comprising 82% of that total. Of those, sea scallop was the highest valued species, at \$252M, or 73% of total landings, landed by 269 vessels and sold to 28 dealers (dealer data). In 2016, New

Bedford was the homeport or primary landing port for 223 and 245 federal fishing permits (i.e., vessels), respectively (GARFO 2019). Shoreside support services based in New Bedford include several dealers, processors, and other infrastructure that support fisheries, such as ice, fuel, and vessel maintenance/repair services.

Skate fishery: see above.

Table 26. Top five species landed by value in New Bedford MA, 2016

Species	Nominal revenue (\$)	Vessels	Dealers
Sea scallop	\$252M	269	28
Atlantic surfclam	\$13M	14	10
American lobster	\$9.4M	86	19
Winter flounder	\$5.5M	59	6
<i>Note:</i> Data for one of the five top species landed are confidential.			
<i>Source:</i> Surfclam data from logbooks. All other species from dealer data, as of June 8, 2018.			

Narragansett/Point Judith, Rhode Island

General: Point Judith is a fishing community in the town of Narragansett, in Washington County, RI. In 2016, Narragansett had a population of 15,672, a 1% decrease from the year 2010 (15,868). In 2012-2016, 2% of the civilian employed population aged 16 years and over worked in agriculture, forestry, fishing, hunting, and mining occupations in Narragansett; the poverty rate was 16.3%; and the population was 95% white, non-Hispanic (US Census 2018). The commercial fishing engagement and reliance indices for Narragansett/Point Judith are high and medium, respectively (Jepson & Colburn 2013).

In 2016, total landings in Point Judith were valued at \$52M, 65% of the state-wide total (\$80M). The top five species landed by value were inshore longfin squid, sea scallops, American lobster, summer flounder and scup (\$44M), comprising 84% of that total (Table 27). Inshore longfin squid was the highest valued species, at \$22M, or 42% of total landings, landed by 88 vessels and sold to 20 dealers. In 2016, Point Judith was the homeport and primary landing port for 119 and 143 federal fishing permits (i.e., vessels), respectively (GARFO 2019). Many of Point Judith’s vessels are active in fisheries managed by the MAFMC. Shoreside support services based in Point Judith include several dealers, processors, and other infrastructure that support fisheries, such as ice, fuel, and vessel maintenance/repair services.

Skate fishery: see above.

Table 27. Top five species landed by value in Point Judith RI, 2016

Species	Revenue (\$)	Vessels	Dealers
Inshore longfin squid	\$22M	88	20
Sea scallop	\$7.9M	53	19
American lobster	\$5.7M	59	10
Summer flounder	\$4.7M	139	19
Scup	\$3.6M	129	21
<i>Source:</i> Dealer data, as of June 8, 2018.			

3.0 REFERENCES

- ASMFC (2015). *American Lobster Stock Assessment for Peer Review Report*. Alexandria, VA: Atlantic States Marine Fisheries Commission. 463 p.
http://www.asmfc.org/uploads/file/55d61d73AmLobsterStockAssmt_PeerReviewReport_Aug2015_red2.pdf.
- ASMFC (2018). *Addendum 26 to amendment 3 to the American lobster fishery management plan; draft addendum 3 to the jonah crab fishery management plan for public comment*. Arlington, VA: Atlantic States Marine Fisheries Commission. 30 p.
http://www.asmfc.org/uploads/file/5a9438ccAmLobsterAddXXVI_JonahCrabAddIII_Feb2018.pdf.
- Clay P.M., L.L. Colburn, J.A. Olson, P. Pinto da Silva, S.L. Smith, A. Westwood & J. Ekstrom (2007). *Community Profiles for the Northeast U.S. Fisheries*. Woods Hole, MA: U.S. Department of Commerce;
<http://www.nefsc.noaa.gov/read/socialsci/communityProfiles.html>.
- Dayton A., J.C. Sun & J. Larabee (2014). *Understanding Opportunities and Barriers to Profitability in the New England Lobster Industry*. Portland, ME: Gulf of Maine Research Institute. 19 p.
http://www.gmri.org/sites/default/files/resource/gmri_2014_lobster_survey.pdf.
- GARFO Greater Atlantic Region Permit Data. Gloucester, MA: NMFS Greater Atlantic Regional Fisheries Office;
<https://www.greateratlantic.fisheries.noaa.gov/aps/permits/data/index.html>.
- Jepson M. & L.L. Colburn (2013). *Development of Social Indicators of Fishing Community Vulnerability and Resilience in the U.S. Southeast and Northeast Regions*. Silver Spring, MD: U.S. Department of Commerce. NOAA Technical Memorandum NMFS-F/SPO-129. 64 p.
- Murphy T.M., A.W. Kitts, C. Demarest & J. Walden (2015). *2013 Final Report on the Performance of the Northeast Multispecies (Groundfish) Fishery (May 2013 - April 2014)*. Woods Hole, MA: NOAA Fisheries Northeast Fisheries Science Center. 111 p.
- NEFMC (2017). *Framework Adjustment 56 to the Northeast Multispecies Fishery Management Plan*. Newburyport, MA: New England Fishery Management Council in consultation with the NMFS. 309 p.
- NEFMC (2019). *Northeast Skate Complex Fishery Management Plan Framework Adjustment 6*. Newburyport, MA: New England Fishery Management Council in cooperation with the National Marine Fisheries Service. 150 p. <https://www.nefmc.org/library/framework-6>.
- NEFMC & MAFMC (1998). *Monkfish Fishery Management Plan*. Saugus, MA: New England and Mid-Atlantic Fishery Management Councils. 480 p.
- NEFSC (2011). *EFH Source Documents: Life History and Habitat Characteristics*. Woods Hole, MA: U.S. Department of Commerce; <http://www.nefsc.noaa.gov/nefsc/habitat/efh/>.
- NEFSC (2013). *2013 Monkfish Operational Assessment*. Woods Hole, MA: U.S. Department of Commerce. NEFSC Reference Document 13-23. 116 p.
- NEFSC Social Sciences Branch. Woods Hole, MA: NMFS Northeast Fisheries Science Center; <http://www.nefsc.noaa.gov/read/socialsci/index.html>.
- NEFSC (2020). *Operational Assessment of the Black Sea Bass, Scup, Bluefish, and Monkfish Stocks, Updated through 2018*. Woods Hole, MA: U.S. Department of Commerce. NEFSC Reference Document 20-01. 160 p.

Richards R.A. (2016). *2016 Monkfish Operational Assessment*. Woods Hole, MA: U.S. Department of Commerce. NEFSC Reference Document 16-09. 109 p.
US Census 2012-2016 American Community Survey;
<http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>.