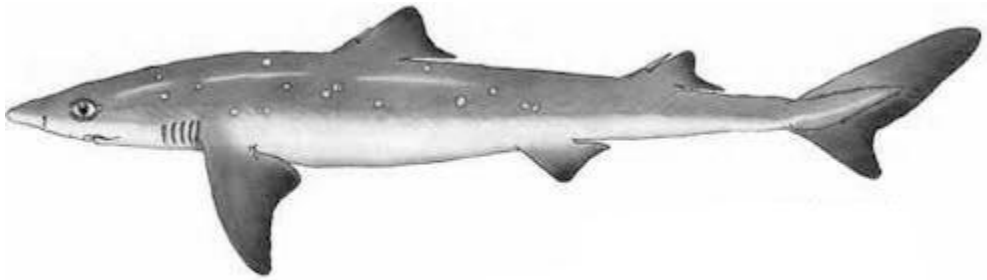
2013 - 2015
Spiny Dogfish Specifications, Environmental Assessment, and Regulatory Impact Review



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1.0 EXECUTIVE SUMMARY

This spiny dogfish specifications document was prepared by the Mid-Atlantic Fishery Management Council (Council) under consultation with the National Marine Fisheries Service (NMFS). The document's purpose is to present a range of alternative management measures for the U.S. Atlantic spiny dogfish fishery along with a characterization of the environmental impacts of each of those alternatives. The alternatives consist of restrictions on landings by the commercial fishery for spiny dogfish in the 2013 through 2015 fishing years (spiny dogfish fishing year is May 1 – Apr 30) and are needed to prevent the fishery from overfishing the spiny dogfish stock in that time period. This document was developed in accordance with a number of applicable laws and statutes that are described in Section 8.0 (see the Table of Contents to locate document sections).

A comparison of the action alternatives (e.g., Alternatives 1, 2, and 3 for each specification year) relative to "no action" (i.e., Alternative 4) is a requirement under the implementation of the National Environmental Policy Act (NEPA), however, "no action" would be a failure to make effort to prevent overfishing, which is inconsistent with the Magnuson-Stevens Fishery Conservation and Management Act (MSA). Therefore, "no action", in this document, is actually a status quo or baseline alternative that would extend existing 2012 quota and trip limits into the 2013 through 2015 fishing years.

According to the Spiny Dogfish FMP as modified through Framework 1 (MAFMC 2006), management measures can be specified for the fishery for up to five years. The decision by the Council to specify three-year management measures was based on a desire to provide for longer-term planning by stakeholders, and also reduce administrative burdens associated with annual specifications. Limiting the specifications timeframe to three years instead of the allowable five was an SSC decision based on the expectation of potential declines in biomass starting in 2016 when low recruitment from the 1997-2003 year classes recruit into the fishery.

Table ES-1 contains the quotas and trip limits for each quota setting alternative. Alternative 1is submitted as the Preferred Alternative, with both the Mid-Atlantic and New England Councils endorsing that alternative's commercial quotas and trip limits for the entire specification period. Among the four alternatives for each year, the landings associated with Alternatives 1 and 2 are expected to result in neutral to positive impacts on the spiny dogfish resource. Alternatives 1 and 2 would increase landings compared to the current fishing year, however, the spiny dogfish stock is expected to increase anyway; and Alternatives 1 and 2 are consistent with an ACT reduced from ACL as recommended by the Spiny Dogfish Monitoring Committee. Alternative 3 would increase the quota above the level recommended by the Monitoring Committee by setting ACT = ACL and is associated with the greatest potential for negative impacts to the spiny dogfish stock. Alternative 4 would maintain the current 2013 commercial quota throughout 2013-2105, which makes this the most restrictive alternative and is, therefore, associated with the most positive impacts on spiny dogfish. Alternative 4 is more restrictive than necessary to prevent overfishing, given the advice of the SSC. The trip limits under Alternatives 1 and 3 (4,000 lb) represent an increase over the trip limits under Alternatives 2 and 4 (3,000 lb). The trip limits do not have a corresponding biological impact, but the larger landings limits are associated with greater ex-vessel revenue on a per-trip basis assuming prices remain stable.

If fishing effort changes in response to larger quotas and trip limits, however marginally, the alternatives are expected to have effects on habitat and EFH as well as ESA-listed and MMPA-protected resources that range from slightly positive to neutral.

Table ES-1. Alternative quota and trip limits for 2013 through 2015. All values are in millions of pounds (M lb).

Year	Alternatives	ACL	Commercial ACT	Commercial Quota	Trip Limit
2013	**Alternative 1** (Preferred, MC-recommended Quota and Increased Trip Limit)	54.295	52.598	40.842	4,000
	Alternative 2 (Non-Preferred, MC-recommended Quota, Status Quo Trip Limit)	54.295	52.598	40.842	3,000
	Alternative 3 (Non-Preferred, Max Quota, Increased Trip Limit)	54.295	54.295	42.539	4,000
	Alternative 4 (Non-Preferred, Status Quo Quota and Trip Limit)	44.737	44.737	35.694	3,000
2014	**Alternative 1** (Preferred, MC-recommended Quota and Trip Limit)	55.277	53.540	41.784	4,000
	Alternative 2 (Non-Preferred, MC-recommended Quota, Status Quo Trip Limit)	55.277	53.540	41.784	3,000
	Alternative 3 (Non-Preferred, Max Quota, Increased Trip Limit)	55.277	55.277	43.520	4,000
	Alternative 4 (Non-Preferred, Status Quo Quota and Trip Limit)	44.737	44.737	35.694	3,000
2015	**Alternative 1** (Preferred, MC-recommended Quota and Increased Trip Limit)	55.063	53.355	41.578	4,000
	Alternative 2 (Non-Preferred, MC-recommended Quota, Status Quo Trip Limit)	55.063	53.355	41.578	3,000
	Alternative 3 (Non-Preferred, Max Quota, Increased Trip Limit)	55.063	55.063	43.307	4,000
	Alternative 4 (Non-Preferred, Status Quo Quota and Trip Limit)	44.737	44.737	35.694	3,000

Table ES-2 contains the Research Set-Aside (RSA) deductions for each RSA alternative. These proposed deductions are the maximum percentage (3%) of the commercial quota that could be set aside for research purposes in a given fishing year as proposed in Amendment 3 to the Spiny Dogfish FMP. Because they are a percentage of the commercial quota, the RSA deductions vary in Table ES-2 under the alternative commercial quotas. The timing of the RSA process prevented any consideration of an RSA deduction for the 2013 fishing year.

Table ES-2. Alternative RSA deductions by fishing year. All values are in M lb. No RSA deduction is recommended for 2013.

	Initial Quota		RSA Deduction		RSA Deduction	
Quota and Trip Limit Alternatives	**2014**	**2015**	**2014**	**2015**	**2014**	**2015**
Preferred Commercial Quota (Alt 1 and 2)	41.784	41.578	1.254	1.247	40.530	40.331
Non-Preferred Commercial Quota (Alt 3)	43.52	43.307	1.306	1.299	42.214	42.008
Non-Preferred Commercial Quota (Alt 4)	35.694	35.694	1.071	1.071	34.623	34.623

According to CEQ regulations, the No Action Alternative should be used for the purposes of evaluating an environmental baseline. A "true" No Action Alternative for dogfish fishery management, however, is not equivalent to status quo or baseline conditions. If the actions proposed in this document are not taken, some current management measures will remain in place (i.e. 3,000 lb trip limit), but the overall management program will not be identical to that of fishing year 2011 (i.e. there would be no specified quota for FY 2012). The "true" No Action Alternative for this fishery is infeasible and inconsistent with the FMP which requires specifications, or quotas, to be established for the fishery. Therefore, the "true" No Action Alternative is not analyzed in this document.

Impacts of the Management Actions

Achieving the quotas under Alternative 1 in each year is consistent with preventing overfishing and is based on the SSC and MC recommendations. Alternative 2 provides the same overall landings limits but constrains trip level catches to status quo levels which made it less appealing to vessel operators. Alternative 3 corresponds to harvest levels above that recommended by the Monitoring Committee by not taking management uncertainty into account and is associated with the greatest potential for negative impacts to the resource, albeit marginally so. Alternative 4 proposes a commercial quota below the level necessary to prevent overfishing. None of the alternatives are expected to result in significant impacts to non-target species (including fish and

protected resources) and habitat. The quota increases under Alternatives 1-3 would result in greater economic benefits compared to Alternative 4. None of the alternatives are associated with significant direct or indirect impacts and all have a positive cumulative impact in the context of other ongoing activities.

Further discussion on the impacts of the alternatives is presented in Section 7.0, and summarized in Table ES-3 below. Table E-1 presents a qualitative summary of the direct and indirect impacts of the various management alternatives.

Table ES-3. Overall qualitative summary of the expected impacts of the alternatives considered in this document for 2013 through 2015. A minus sign (-) signifies an expected negative impact, a plus sign (+) signifies an expected positive impact, and zero is used to indicate a null impact. A "sl" in front of a sign is used to convey a minor effect, such as slight positive (sl+). An 'S' indicates short-term, and an 'L' is indicates long-term impacts.

Year	Alternatives	Biological	EFH	Protected Resources	Economic	Social
2013	**Alternative 1** (Preferred, MC-recommended Quota and Increased Trip Limit)	sl+	0/sl-	0/sl-	sl+	sl+
	Alternative 2 (Non-Preferred, MC-recommended Quota, Status Quo Trip Limit)	sl+	0/sl-	0/sl-	sl+	sl+
	Alternative 3 (Non-Preferred, Max Quota, Increased Trip Limit)	0/sl+	0/sl-	0/sl-	+	+
	Alternative 4 (Non-Preferred, Status Quo Quota and Trip Limit)	+	0	0	0	0
2014	**Alternative 1** (Preferred, MC-recommended Quota and Increased Trip Limit)	sl+	0/sl-	0/sl-	sl+	sl+
	Alternative 2 (Non-Preferred, MC-recommended Quota, Status Quo Trip Limit)	sl+	0/sl-	0/sl-	sl+	sl+
	Alternative 3 (Non-Preferred, Max Quota, Increased Trip Limit)	0/sl+	0/sl-	0/sl-	+	+
	Alternative 4 (Non-Preferred, Status Quo Quota and Trip Limit)	+	0	0	0	0
2015	**Alternative 1** (Preferred, MC-recommended Quota and Increased Trip Limit)	sl+	0/sl-	0/sl-	sl+	sl+
	Alternative 2 (Non-Preferred, MC-recommended Quota, Status Quo Trip Limit)	sl+	0/sl-	0/sl-	sl+	sl+
	Alternative 3 (Non-Preferred, Max Quota, Increased Trip Limit)	0/sl+	0/sl-	0/sl-	+	+
	Alternative 4 (Non-Preferred, Status Quo Quota and Trip Limit)	+	0	0	0	0

Cumulative Impacts

When the proposed action is considered in conjunction with all the other pressures placed on fisheries by past, present, and reasonably foreseeable future actions, it is not expected to result in any significant impacts, positive or negative; therefore, there are no significant cumulative effects associated with the action proposed in this document (see section 7.5).

Conclusions

A detailed discussion of the environmental impacts of the alternatives, as well as any cumulative impacts, considered in this specifications document are provided in section 7.0. The preferred action alternative is not associated with significant impacts to the biological, physical, social or economic, environment individually or in conjunction with other actions under NEPA; therefore, a "Finding of No Significant Impact" is determined.

2.0 LIST OF ACRONYMS

ABC	Annual Biological Catch
ACL	Annual Catch Limit
ALWTRP	Atlantic Large Whale Take Reduction Plan
AM	Accountability Measure
ASAP	Age Structured Assessment Program
ASMFC	Atlantic States Marine Fisheries Commission
CEA	Cumulative Effects Assessment
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CV	Coefficient of Variation
CZMA	Coastal Zone Management Act
DPS	Distinct Population Segment
DPSWG	Data Poor Stocks Working Group
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EFP	Exempted Fishing Permit
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act of 1973
F	Fishing Mortality Rate
FR	Federal Register
FMP	Fishery Management Plan
FONSI	Finding of No Significant Impact
HPTRP	Harbor Porpoise Take Reduction Plan
IRFA	Initial Regulatory Flexibility Analysis
LNG	Liquefied Natural Gas
LOF	List of Fisheries
LWTRP	Large Whale Take Reduction Plan
MAFMC	Mid-Atlantic Fishery Management Council
MMPA	Marine Mammal Protection Act
MRFSS	Marine Recreational Fisheries Statistical Survey
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSY	Maximum Sustainable Yield
NAO	NOAA Administrative Order
NEFSC	Northeast Fisheries Science Center
NEFOP	Northeast Fisheries Observer Program
NEPA	National Environmental Policy Act
NERO	Northeast Regional Office
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OFL	Overfishing Limit
OY	Optimal Yield
PRA	Paperwork Reduction Act
RFA	Regulatory Flexibility Act
RIR	Regulatory Impact Review
RSA	Research Set-Aside
SARC	Stock Assessment Review Committee
SAW	Stock Assessment Workshop
SFA	Sustainable Fisheries Act
SBA	Small Business Administration
SSB	Spawning Stock Biomass
SSC	Scientific and Statistical Committee
TED	Turtle Excluder Device
US	United States
VECs	Valued Ecosystem Components
VTR	Vessel Trip Report

4.0 INTRODUCTION AND BACKGROUND OF SPECIFICATION PROCESS

4.1 Purpose and Need for the Action

The purpose of this action (specification of spiny dogfish management measures) is to implement the 2013 through 2015 commercial quota for the U.S. Atlantic spiny dogfish fishery. This action is needed to prevent overfishing and ensure that the required annual catch limits (ACLs) for spiny dogfish in those years are not exceeded. This document, which describes the action and its impacts, was developed in accordance with the Magnuson-Stevens Fishery Conservation and Management Act (MSA), the National Environmental Policy Act of 1969 (NEPA), and the Spiny Dogfish Fishery Management Plan (FMP). The MSA is the primary domestic legislation governing fisheries management in the U.S. Exclusive Economic Zone (EEZ) and compliance with the MSA requires preventing overfishing on an ongoing basis. Failure to specify spiny dogfish management measures to prevent overfishing in 2013 through 2015 would be inconsistent with that legislation. As required by the MSA, the Council's Scientific and Statistical Committee (SSC) provides ongoing advice for preventing overfishing and achieving maximum sustainable yield. The Spiny Dogfish Monitoring Committee (MC), created through the FMP, develops specific management measures which constrain spiny dogfish catch at identified levels. The advice of the SSC and MC form the basis for the Council's development of the preferred spiny dogfish management measures.

Three-year specifications
This is the first specifications package for spiny dogfish in which multi-year management measures are recommended. According to the Spiny Dogfish FMP as modified through Framework 1 (MAFMC 2006), management measures can be specified for up to five years. The decision by the Council to specify three-year management measures was based on a desire to provide for longer-term planning by stakeholders, and also reduce administrative burdens associated with annual specifications. The SSC and MC took into account sources of scientific and management uncertainty, respectively, associated with multi-year management measures in making their recommendations. Further elaboration of this is provided in the respective Committee summaries available at www.mafmc.org. Limiting the specifications timeframe to three years instead of the allowable five was an SSC decision based on the expectation that biomass will begin to decline in 2016 as year classes from a protracted period of low recruitment (1997-2003) recruit into the fishery.

Figure 1 provides a diagram of the process for determining annual spiny dogfish management measures that was outlined in Amendment 2 to the FMP (MAFMC 2011). Accordingly, the SSC first identifies the catch level above which overfishing is occurring (overfishing limit or OFL) as well as the catch below OFL, called acceptable biological catch or ABC, that adequately accounts for scientific uncertainty in the estimate of OFL and the condition of the stock. Next, the MC determines the annual catch limit (ACL) which, if exceeded, would trigger accountability measures (AMs) such as reductions in future year landings. By accounting for assumed Canadian landings in the upcoming year, the catch limit determined by the MC reflects a "domestic ACL. The MC further determines the catch level at or below ACL called the annual catch target (ACT) that accounts for uncertainty in the efficacy of the management measures.

The discarded (as opposed to landed) component of that catch is deducted to arrive at the total allowable landings (TAL). Although not obligated under the FMP, the Council then deducts assumed recreational landings from the TAL in order to arrive at an appropriate commercial quota.

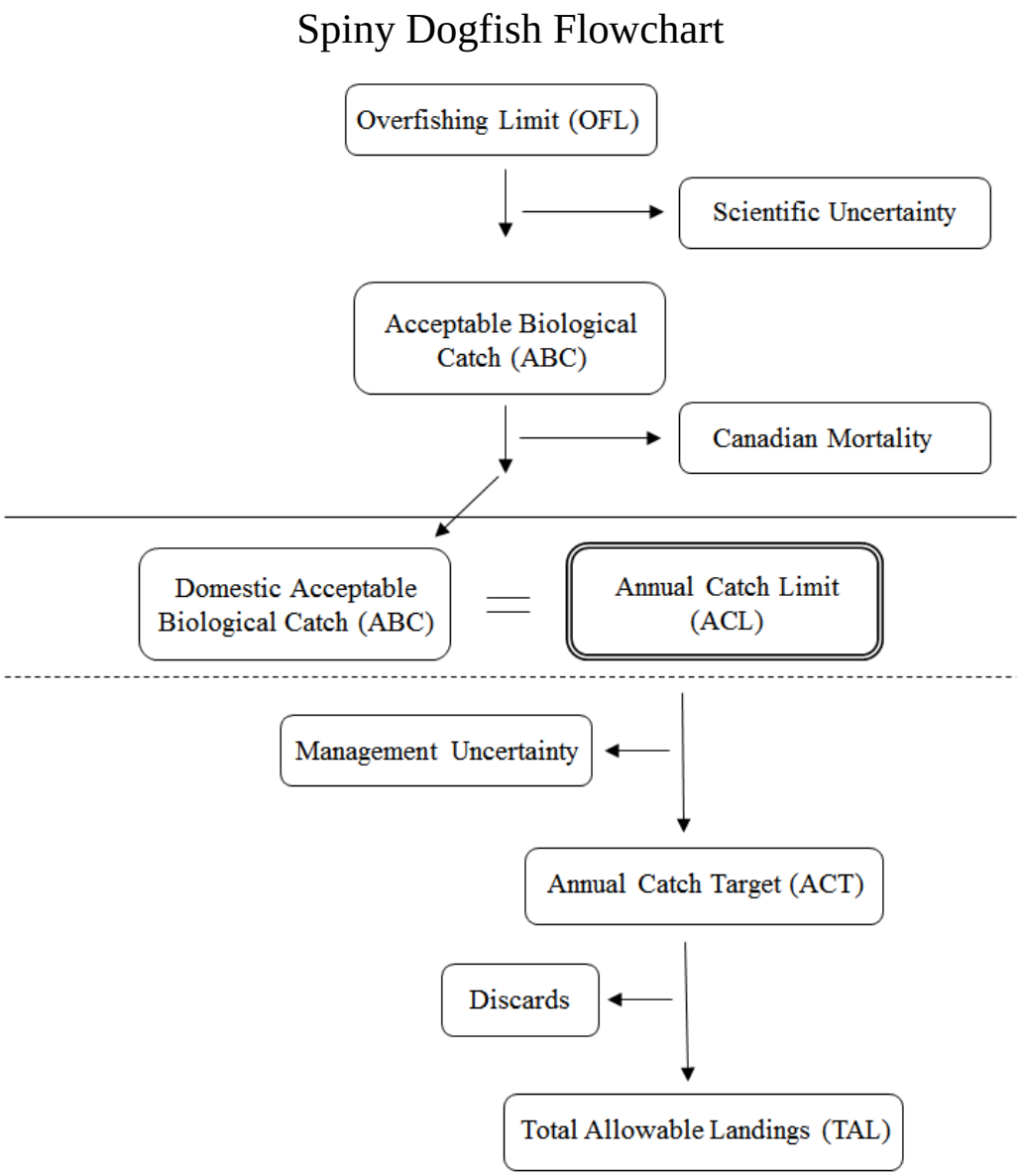

Figure 1. Specification process for spiny dogfish as described in Amendment 2 to the Spiny dogfish FMP (Omnibus ACL/AM Amendment).

The SSC, MC, and Council identified values for the management measures listed above according to their respective responsibilities, and these are reported at www.mafmc.org. An overview is provided here.

The following three paragraphs describe calculation of ACL, ACT, commercial quota, RSA, and trip limits for each specification year. The values are also listed in Table 1, and the basis for the values is provided in Table 2. For Status Quo Quota and Trip Limit Alternatives, ACL, ACT, commercial quota and RSA reflect status quo (current year) values.

2013
For the 2013 fishing year, the SSC determined OFL for spiny dogfish to be 67.576 M lb and the ABC to be 54.474 M lb, where ABC is associated with a 40 % probability of overfishing. According to the Council's risk policy (MAFMC 2011), management measures based on this ABC will adequately ensure that overfishing does not occur (see SSC report). A domestic ABC (54.295 M lb) was determined by reducing the overall ABC by Canadian landings (179 k lb). According to the FMP, ACL is set equivalent to Domestic ABC. *The domestic ABC is referred to hereafter simply as ABC.* Historic landings data compared to commercial quotas were reviewed by the MC and the ACT was calculated as ACL minus a management uncertainty buffer. The management uncertainty buffer corresponded to the average 2010-2011 landings overage as a percent (3.99%) of the TAL, which for 2013 is 1.697 M lb. This required the TAL to be calculated twice, once under ACT = ACL, then again to include the management uncertainty buffer. Average long term (2002-2011) discards were 11.698 M lb. This was deducted from ACT to get TAL. Long term discards were observed by the MC to be very stable despite increasing quotas. After deducting for discards, the resulting TAL is 40.900 M lb. An additional deduction for recreational landings (58 k lb) results in a commercial quota of 40.842 M lb.

2014
For the 2014 fishing year, the SSC determined ABC to be 55.455 M lb. OFL is not estimated for years beyond 2013. ABC was determined by applying the effective fishing mortality rate associated with ABC in 2013 (F = 0.19528) to 2014 projected biomass. Other management measures were calculated in the same manner as for 2013 such that, Domestic ABC = 55.277 M lb = ACL. ACT = 53.540 M lb = ACL – management uncertainty buffer (1.737 M lb). TAL = 41.842 M lb = ACT – discards (11.698 M lb). Commercial quota = 41.734 M lb = TAL - recreational landings (58 k lb).

2015
For the 2015 fishing year, the SSC determined ABC to be 55.241 M lb. As above, OFL is not estimated for years beyond 2013. ABC was determined by applying the effective fishing mortality rate associated with ABC in 2013 (F = 0.19528) to 2015 projected biomass. Other management measures were calculated in the same manner as for 2013 and 2014 such that, Domestic ABC = 55.063 M lb = ACL. ACT = 53.335 M lb = ACL – management uncertainty buffer (1.728 M lb). TAL = 41.637 M lb = ACT – discards (11.698 M lb). Commercial quota = 41.578 M lb = TAL - recreational landings (58 k lb).

Besides conveying the Councils' management alternatives to the NMFS Regional Administrator, this specifications document also serves as an environmental assessment (EA) under NEPA and provides the Regional Administrator with a characterization of the impacts of the various

management alternatives. Aspects of the affected environment likely to be directly or indirectly affected by the management alternatives are referred to as *valued ecosystem components* (VECs; Beanlands and Duinker 1984). These VECs comprise the affected environment and are specifically defined as the managed resource (spiny dogfish any non-target species); habitat including EFH for the managed resource and non-target species; protected species considered by the endangered species act (ESA) and marine mammal protection act (MMPA); and social and economic aspects of human communities.

The NMFS Regional Administrator will review the alternatives in this document and may make revisions if necessary to achieve FMP objectives and statutory requirements. Because the FMP is jointly managed with the New England Council, when the Councils do not recommend identical management measures, the Regional Administrator may select any management measure not rejected by both Councils. The Mid-Atlantic and New England Councils met in October and November 2012 respectively.

Table 1. Derivation of Monitoring Committee's recommended spiny dogfish quotas for 2013 through 2015. All values are in lbs.

2013 Measures	Basis	M lb
OFL	*F_{MSY} (0.2439)*	67.576
ABC	*Constant F (0.19528)*	54.474
Canadian Landings	*= ave 2009-2011*	0.179
Domestic ABC	*= ABC – Canadian Landings*	54.295
ACL	*= Domestic ABC*	54.295
Mgmt Uncertainty Buffer	*Ave of quota overages (pct) in 2010-2011 (4.0%)*	1.697
ACT	*= Domestic ACL – management uncertainty*	52.598
U.S. Discards	*= ave 2002-2011*	11.698
TAL	*ACT – Discards*	40.900
U.S. Rec Landings	*= ave 2010-2011*	0.058
Comm Quota	*TAL – Rec Landings*	40.841896

2014 Measures	Basis	M lb
OFL		
ABC	*Constant F (0.19528)*	55.455
Canadian Landings	*= ave 2009-2011*	0.179
Domestic ABC	*= ABC – Canadian Landings*	55.277
ACL	*= Domestic ABC*	55.277
Mgmt Uncertainty Buffer	*Ave of quota overages (pct) in 2010-2011 (4.0%)*	1.737
ACT	*= Domestic ACL – management uncertainty*	53.540
U.S. Discards	*= ave 2002-2011*	11.698
TAL	*ACT – Discards*	41.842
U.S. Rec Landings	*= ave 2010-2011*	0.058
Comm Quota	*TAL – Rec Landings*	41.783807

Table 1 continued

2015 Measures	Basis	M lb
OFL		
ABC	*Constant F (0.19528)*	55.241
Canadian Landings	*= ave 2009-2011*	0.179
Domestic ABC	*= ABC - Canadian Landings*	55.063
ACL	*= Domestic ABC*	55.063
Mgmt Uncertainty Buffer	*Ave of quota overages (pct) in 2010-2011 (4.0%)*	1.728
ACT	*= Domestic ACL - management uncertainty*	53.335
U.S. Discards	*= ave 2002-2011*	11.698
TAL	*ACT - Discards*	41.637
U.S. Rec Landings	*= ave 2010-2011*	0.058
Comm Quota	*TAL - Rec Landings*	41.578491

5.0 MANAGEMENT ALTERNATIVES

5.1 COMMERCIAL QUOTA AND TRIP LIMIT ALTERNATIVES

There are four quota and trip limit setting alternatives under consideration in this document for each specification year. An analysis of those alternatives (i.e., Alternatives 1, 2, and 3) relative to “no action” (i.e., Alternative 4) is a requirement under the implementation of NEPA, however, “no action”, in this case, would be a failure to make efforts to prevent overfishing, which is inconsistent with the MSA. Therefore, “no action”, for the purposes of this document, is actually a status quo or baseline alternative that would extend existing 2012 management measures into the 2013 through 2015 fishing years. The ACL, ACT, commercial quota, and trip limit under Alternatives 1 through 4 for each year are given below in Table 1.

Table 2. Values (M lb of spiny dogfish) associated with the management alternatives. Alternative 4 is considered to be the No Action alternative.

Year	Alternatives	ACL	ACT	Commercial Quota	Trip Limit
2013	**Alternative 1** (Preferred, MC-recommended Quota and Increased Trip Limit)	54.295	52.598	40.842	4,000
	Alternative 2 (Non-Preferred, MC-recommended Quota, Status Quo Trip Limit)	54.295	52.598	40.842	3,000
	Alternative 3 (Non-Preferred, Max Quota, Increased Trip Limit)	54.295	54.295	42.539	4,000
	Alternative 4 (Non-Preferred, Status Quo Quota and Trip Limit)	44.737	44.737	35.694	3,000
2014	**Alternative 1** (Preferred, MC-recommended Quota and Trip Limit)	55.277	53.540	41.784	4,000
	Alternative 2 (Non-Preferred, MC-recommended Quota, Status Quo Trip Limit)	55.277	53.540	41.784	3,000
	Alternative 3 (Non-Preferred, Max Quota, Increased Trip Limit)	55.277	55.277	43.520	4,000
	Alternative 4 (Non-Preferred, Status Quo Quota and Trip Limit)	44.737	44.737	35.694	3,000
2015	**Alternative 1** (Preferred, MC-recommended Quota and Increased Trip Limit)	55.063	53.355	41.578	4,000
	Alternative 2 (Non-Preferred, MC-recommended Quota, Status Quo Trip Limit)	55.063	53.355	41.578	3,000
	Alternative 3 (Non-Preferred, Max Quota, Increased Trip Limit)	55.063	55.063	43.307	4,000
	Alternative 4 (Non-Preferred, Status Quo Quota and Trip Limit)	44.737	44.737	35.694	3,000

5.1.1 Fishing Year 2013 Quota and Trip Limit Alternatives

5.1.1.1 Alternative 1 (Preferred) – Set Quota at 40.842 M lb and Trip Limit at 4,000 lb)

For FY2013, specify a commercial quota of 40.842 M lb with trip limit of 4,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (23.648 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (17.194 M lb). Amendment 3 to the FMP may be implemented after the start of the 2013 fishing year and proposes to eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota would be specified through the federal FMP.

In selecting this alternative, the Councils are recommending that the harvest limit (quota) be increased in keeping with the expansion of stock biomass, while also insuring that overfishing is prevented as identified by the SSC, and that management uncertainty is accounted for, as recommended by the Monitoring Committee. In addition, the increased trip limit (compared to the No Action) is intended by the Councils to increase ex-vessel economic benefits to fishery participants. The quota recommended under this alternative also accommodates and minimizes conflict with interstate management by the ASMFC which adopted the coastwide quota identified in this alternative for state-jurisdictional waters.

5.1.1.2 Alternative 2 (Increase Quota but Maintain Status Quo Trip Limits) – Set Quota at 40.842 M lb and Trip Limit at 3,000 lb

For FY2013, specify a commercial quota of 40.842 M lb with trip limit of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (23.648 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (17.194 M lb). Amendment 3 to the FMP may be implemented after the start of the 2013 fishing year and proposes to eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota would be specified through the federal FMP.

This Alternative differs from Alternative 1 only in terms of the trip limit. Maintaining the status quo trip limit (3,000 lb) was considered by the Councils as possibly reducing the likelihood that the coastwide quota would be caught before the close of the fishing year. However, given the increase in quota, the Council chose not to maintain the lower trip limit for the Council-preferred alternative. The quota recommended under this alternative does not conflict with interstate management by the ASMFC.

5.1.1.3 Alternative 3 (Maximum Quota, Increase Trip Limits) – Set Quota at 42.539 M lb and Trip Limit at 4,000 lb)

For FY2013, specify a commercial quota of 42.539 M lb with trip limit of 4,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (24.630 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of

the quota (17.909 M lb). Amendment 3 to the FMP may be implemented after the start of the 2013 fishing year and proposes to eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota would be specified through the federal FMP.

This Alternative is associated with the least restrictive commercial quota in that a reduction, as made by the Monitoring Committee is not applied, such that ACT = ACL. Additionally, this alternative would liberalize the trip limit to 4,000 lb. The Council's accepted the Monitoring Committee's recommendations and did not endorse this alternative as a preferred alternative. The quota recommended under this alternative also conflicts with interstate management by the ASMFC which adopted a different coastwide quota for state-jurisdictional waters.

5.1.1.4 Alternative 4 (Maintain Status Quo Quota and Trip Limits) – Set Quota at 35.694 M lb and Trip Limit at 3,000 lb)

For FY2013, specify a commercial quota of 35.694 M lb with trip limit of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (20.667 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (15.027 M lb). Amendment 3 to the FMP may be implemented after the start of the 2013 fishing year and proposes to eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota would be specified through the federal FMP.

Under this alternative, a more restrictive harvest limit (quota) would be implemented than is necessary to insure that overfishing is prevented in 2015 as identified by the SSC. Maintaining the status quo trip limit (3,000 lb) was considered by the Councils as possibly having a lower likelihood that the status quo coastwide quota would be caught before the close of the fishing year. The quota recommended under this alternative conflicts with interstate management by the ASMFC which adopted a different the coastwide quota.

5.1.2 Fishing Year 2014 Quota and Trip Limit Alternatives

5.1.2.1 Alternative 1 (Preferred) – Set Quota at 41.784 M lb and Trip Limit at 4,000 lb)

For FY2014, specify a commercial quota of 41.784 M lb with trip limit of 4,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (24.193 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (17.591 M lb). Amendment 3 to the FMP may be implemented after the start of the 2013 fishing year and proposes to eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota would be specified through the federal FMP.

In selecting this alternative, the Councils are recommending that the harvest limit (quota) be increased in keeping with the expansion of stock biomass, while also insuring that overfishing is prevented as identified by the SSC, and that management uncertainty is accounted for, as recommended by the Monitoring Committee. In addition, the increased trip limit is intended by the Councils to increase ex-vessel economic benefits to fishery participants. The quota recommended under this alternative also accommodates and minimizes conflict with interstate

management by the ASMFC which adopted the coastwide quota identified in this alternative for state-jurisdictional waters.

5.1.2.2 Alternative 2 (Increased Quota but Maintain Status Quo Trip Limits) – Set Quota at 41.784 M lb and Trip Limit at 3,000 lb)

For FY2014, specify a commercial quota of 41.784 M lb with trip limit of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (24.193 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (17.591 M lb). Amendment 3 to the FMP may be implemented after the start of the 2013 fishing year and proposes to eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota would be specified through the federal FMP.

This Alternative differs from Alternative 1 only in terms of the recommended trip limit. Maintaining the status quo trip limit (3,000 lb) was considered by the Councils as possibly reducing the likelihood that the coastwide quota would be caught before the close of the fishing year. However, given the increase in quota, the Council chose not to maintain the lower trip limit. The quota recommended under this alternative does not conflict with interstate management by the ASMFC.

5.1.2.3 Alternative 3 (Maximum Quota, Increase Trip Limit) – Set Quota at 43.520 M lb and Trip Limit at 4,000 lb)

For FY2014, specify a commercial quota of 43.520 M lb with trip limit of 4,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (25.198 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (18.322 M lb). Amendment 3 to the FMP may be implemented after the start of the 2013 fishing year and proposes to eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota would be specified through the federal FMP.

This Alternative is associated with the least restrictive commercial quota in that a reduction, as made by the Monitoring Committee is not applied, such that ACT = ACL. Additionally, this alternative would liberalize the trip limit to 4,000 lb. The Council's accepted the Monitoring Committee's recommendations and did not endorse this alternative. The quota recommended under this alternative also conflicts with interstate management by the ASMFC which adopted a different coastwide quota for state-jurisdictional waters.

5.1.2.4 Alternative 4 (Status Quo Quota and Trip Limit) – Set Quota at 35.694 M lb and Trip Limit at 3,000 lb)

For FY2014, specify a commercial quota of 35.694 M lb with trip limit of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (20.667 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (15.027 M lb). Amendment 3 to the FMP may be implemented after the start of the 2013 fishing year and proposes to eliminate the allocation of the commercial quota by period.

After the effective date for that amendment, only a coastwide quota would be specified through the federal FMP.

Under this alternative, a more restrictive harvest limit (quota) would be implemented than is necessary to insure that overfishing is prevented in 2015 as identified by the SSC. Maintaining the status quo trip limit (3,000 lb) was considered by the Councils as possibly having a lower likelihood that the status quo coastwide quota would be caught before the close of the fishing year. The quota recommended under this alternative conflicts with interstate management by the ASMFC which adopted a different the coastwide quota.

5.1.3 Fishing Year 2015 Quota and Trip Limit Alternatives

5.1.3.1 Alternative 1 (Preferred) – Set Quota at 41.578 M lb and Trip Limit at 4,000 lb)

For FY2015, specify a commercial quota of 41.578 M lb with trip limit of 4,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (24.074 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (17.504 M lb). Amendment 3 to the FMP may be implemented after the start of the 2013 fishing year and proposes to eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota would be specified through the federal FMP.

In selecting this alternative, the Councils are recommending that the harvest limit (quota) be increased in keeping with the expansion of stock biomass, while also insuring that overfishing is prevented as identified by the SSC, and that management uncertainty is accounted for, as recommended by the Monitoring Committee. In addition, the increased trip limit (compared to is intended by the Councils to increase ex-vessel economic benefits to fishery participants. The quota recommended under this alternative also accommodates and minimizes conflict with interstate management by the ASMFC which adopted the coastwide quota identified in this alternative for state-jurisdictional waters.

5.1.3.2 Alternative 2 (Increased Quota, Status Quo Trip Limit) – Set Quota at 41.578 M lb and Trip Limit at 3,000 lb)

For FY2015, specify a commercial quota of 41.578 M lb with trip limit of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (24.074 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (17.504 M lb). Amendment 3 to the FMP may be implemented after the start of the 2013 fishing year and proposes to eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota would be specified through the federal FMP.

This Alternative differs from Alternative 1 only in terms of the recommended trip limit. Maintaining the status quo trip limit (3,000 lb) was considered by the Councils as possibly reducing the likelihood that the coastwide quota would be caught before the close of the fishing year. However, given the increase in quota, the Council chose not to maintain the lower trip limit. The quota recommended under this alternative does not conflict with interstate management by the ASMFC.

5.1.3.3 Alternative 3 (Maximum Quota, Increased Trip Limit) – Set Quota at 43.307 M lb and Trip Limit at 4,000 lb)

For FY2015, specify a commercial quota of 43.307 M lb with trip limit of 4,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (25.074 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (18.232 M lb). Amendment 3 to the FMP may be implemented after the start of the 2013 fishing year and proposes to eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota would be specified through the federal FMP.

This Alternative is associated with the least restrictive commercial quota in that a reduction, as made by the Monitoring Committee is not applied, such that ACT = ACL. Additionally, this alternative would liberalize the trip limit to 4,000 lb. The Council's accepted the Monitoring Committee's recommendations and did not endorse this alternative. The quota recommended under this alternative also conflicts with interstate management by the ASMFC which adopted a different coastwide quota for state-jurisdictional waters.

5.1.3.4 Alternative 4 (Status Quo Quota, Trip Limit) – Set Quota at 35.694 M lb and Trip Limit at 3,000 lb)

For FY2015, specify a commercial quota of 35.694 M lb with trip limit of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (20.667 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (15.027 M lb). Amendment 3 to the FMP may be implemented after the start of the 2013 fishing year and proposes to eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota would be specified through the federal FMP.

Under this alternative, a more restrictive harvest limit (quota) would be implemented than is necessary to insure that overfishing is prevented in 2015 as identified by the SSC. Maintaining the status quo trip limit (3,000 lb) was considered by the Councils as possibly having a lower likelihood that the status quo coastwide quota would be caught before the close of the fishing year. The quota recommended under this alternative conflicts with interstate management by the ASMFC which adopted a different the coastwide quota.

5.2 RSA Alternatives

If Amendment 3 to the Spiny Dogfish FMP is implemented as recommended, the Councils could specify up to 3% of the commercial quota as set-aside for the purpose of fishery-related research. As of the submission of this specifications package, Amendment 3 has not yet been implemented. The action alternative (Alternative 2) anticipates that Amendment 3 will be implemented in time for RSA awards for the 2014 fishing year.

5.2.1 Alternative 1 (No Research Set-Asides/No-Action/*Status quo*)

Under this alternative, no RSA will be allowed for spiny dogfish and the commercial quotas would not be adjusted for the RSAs when established.

5.2.2 Alternative 2 (Preferred: Specify Research Set-Asides)

If Amendment 3 is implemented as recommended by the Councils, this alternative would allow up to 3% of the 2014 and 2015 spiny dogfish landings to be set-aside in each year to fund projects selected under the Mid-Atlantic RSA Program. No action is being considered for the 2013 fishing year due to the timing of the RSA approval process. The project selection and award process for the 2014 Mid-Atlantic RSA Program has not yet been conducted and the selection and awards for 2015 would be done in 2014, therefore, the specific research quota awards are not known. Once the awards are finalized, NMFS will return any un-awarded set-aside amount to the commercial fishery either through each year's spiny dogfish specification rulemaking process or through the publication of a separate notice in the Federal Register notifying the public of a quota adjustment.

The MSA requires that interested parties be provided with an opportunity to comment on all proposed exempted fishing permits. Potential environmental impacts of this program on other MAFMC-managed fisheries (bluefish, summer flounder, scup, black sea bass, *Illex*, longfin, butterfish, and Atlantic mackerel) are addressed in those respective specification documents. Additional consultation and analysis with respect to NEPA, ESA, MSA, and other applicable law may be necessary if the statement of work changes or additional exemptions are requested.

5.3 "True" No-Action Alternatives

Section 5.03(b) of NOAA Administrative Order (NAO) 216-6, "Environmental review procedures for implementing the National Environmental Policy Act," states that "an Environmental Assessment (EA) must consider all reasonable alternatives, including the preferred action and the no action alternative." Consideration of the "no action" alternative is important because it shows what would happen if the proposed action is not taken. Defining exactly what is meant by the "no action" alternative is often difficult. The President's Council on Environmental Quality (CEQ) has explained that there are two distinct interpretations of the "no action:" One interpretation is essentially the status quo, i.e., no change from the current management; and the other interpretation is when a proposed project, such as building a railroad facility, does not take place.

For the purposes of this EA, the no action alternative is defined as follows: (1) no 2013 through 2015 proposed specifications for a commercial quota will be published; (2) the trip limit (3,000 lb) will remain unchanged; (3) no RSA allocated to research in 2014 and 2015.

The no action alternative is inconsistent with the goals and objectives of the FMP, is also inconsistent with the MSA, and is not considered reasonable. Therefore, it is not analyzed further in the EA and the actions (Alternatives 1 and 2) are compared to the status quo alternative (base line) as opposed to the "true" no action alternatives described above.

6.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT AND FISHERIES

6.1 Description of the Managed Resource

6.1.1 Description of the Fisheries

The management unit for spiny dogfish is all spiny dogfish in U.S. waters of the western Atlantic Ocean. The commercial fishery is fully described in Section 2.3 of the FMP (MAFMC 1999). No significant recreational fishery exists for this stock. An overview of the stock and associated commercial fishery landings is provided below.

6.1.1.1 Spiny Dogfish Stock

Reports on "Stock Status," including annual assessment updates, Stock Assessment Workshop (SAW) reports, Stock Assessment Review Committee (SARC) panelist reports and peer-review panelist reports are available online at the NEFSC website: http://www.nefsc.noaa.gov/nefsc/saw/. EFH Source Documents, which include details on stock characteristics and ecological relationships, are available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/.

Figure 2 below provides a snapshot of several relevant characteristics of the spiny dogfish stock that influence management of the commercial fishery. Among these are: 1) Spiny dogfish are slow growing and, therefore, recovery of an overly exploited stock can require prolonged rebuilding. 2) Males and females grow at different rates and to different maximum sizes such that the largest fish in the population are almost all female and these are more valuable to the commercial fishery. 3) Litter size, or fecundity, increases with age such that productivity can be markedly hampered by an absence of large females in the stock. 4) Maturity is delayed (12-21 years) in females such that the immature stock is susceptible to mortality for a prolonged period before contributing to stock production.

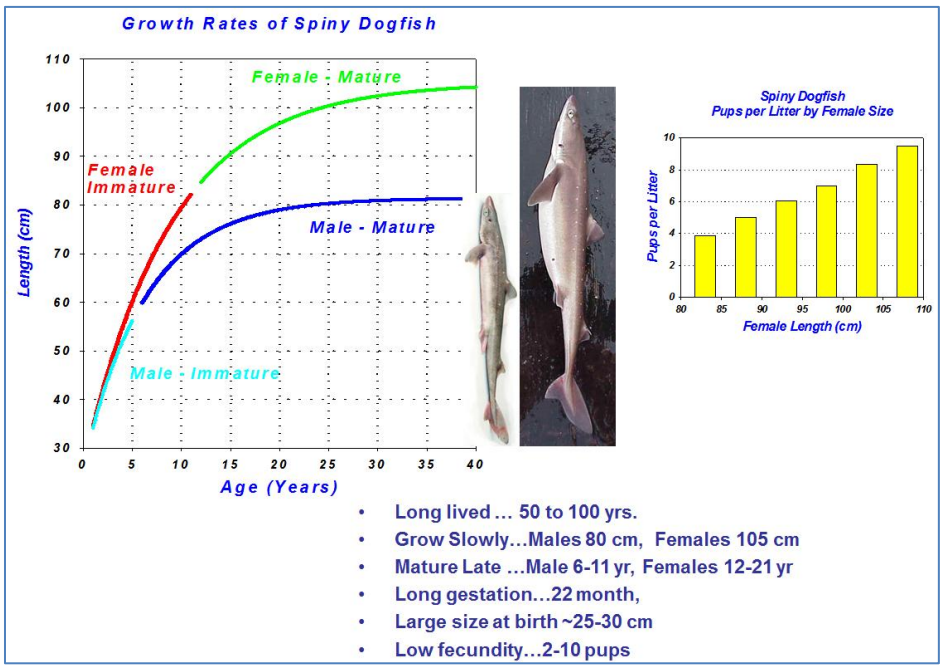

Figure 2. Summary of biological characteristics spiny dogfish relevant to the species' commercial fisheries exploitation (from Rago 2010 unpubl.).

Historical Stock Condition

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 highly successful and in 2010 the Northeast Regional Office (NERO) of NMFS communicated the *rebuilt* status of the stock to the Councils.

Current Stock Condition

<u>Not Overfished</u>
The Bmsy reference point defines when the stock is rebuilt (above Bmsy) and overfished (below ½ Bmsy). For spiny dogfish, Bmsy (proxy) is the spawning stock biomass that maximizes recruitment (SSBmax) in a Ricker type (dome-shaped) stock-recruitment model (Rago and Sosebee 2010). SSBmax is estimated to be 159,288 mt (351 M lb) with ½ of that target corresponding to the biomass threshold (79,644 mt; 175.5 M lb). In September 2012, the Northeast Fisheries Science Center (NEFSC) updated their assessment of the spiny dogfish stock using catch data (2011), and results from the 2012 trawl survey. The updated estimate of SSB for 2012 is 215,744 mt (475.634 M lb), about 35% above SSB_{max} (159,288 mt). In updating the assessment, the NEFSC estimated a *100% probability that the stock is not overfished*.

<u>Overfishing not Occurring</u>
A review by the Council's SSC in 2011 was conducted to establish its endorsement of a fishing mortality reference point that defines when overfishing is occurring (Fmsy). The updated fishing mortality reference point provided by the NEFSC is $F_{msy} = 0.2439$. All accountable sources of removals contribute to the estimate of fishing mortality (F) under the current assessment. For the most recent assessment year (2011), these include U.S. commercial landings (21.589 M lb), Canadian commercial landings (273 k lb), U.S. dead discards (10.553 M lb), and U.S. recreational landings (70,548 lb). Total removals in 2011 were approximately 32.113 M lb corresponding to an F estimate of 0.114, well below $F_{msy} = 0.2439$. In updating the assessment, the NEFSC estimated a *100% probability that overfishing was not occurring* ($F_{2011} < F_{threshold}$).

Future Stock Condition

Projections of stock biomass were provided as part of the NEFSC's stock status update. Long term projections indicate that even if the stock was fished at Fmsy (i.e., OFL in each fishing year), it would *not* revert to an overfished condition at any time in the 20 year projection period. Stock biomass is expected to decline from 2013 – 2020 while low 1997 – 2003 year classes recruit into the mature female biomass. The stock is not expected to decline below the Bmsy target during the specification period. The Council's SSC will review survey catches of spiny dogfish each year and could recommend reconsideration of catch limits if stock condition declines more than expected in the current projections.

6.1.2 Commercial Fishery Landings

Calendar year harvest estimates from 1989 -2011 are provided in Table 3 and Figure 3. These include landings from U.S. commercial and recreational sectors as well as the Canadian commercial fishery. A thorough characterization of the historic (pre-FMP) fishery for spiny dogfish is given in Section 2.3 of the FMP (MAFMC 1999).

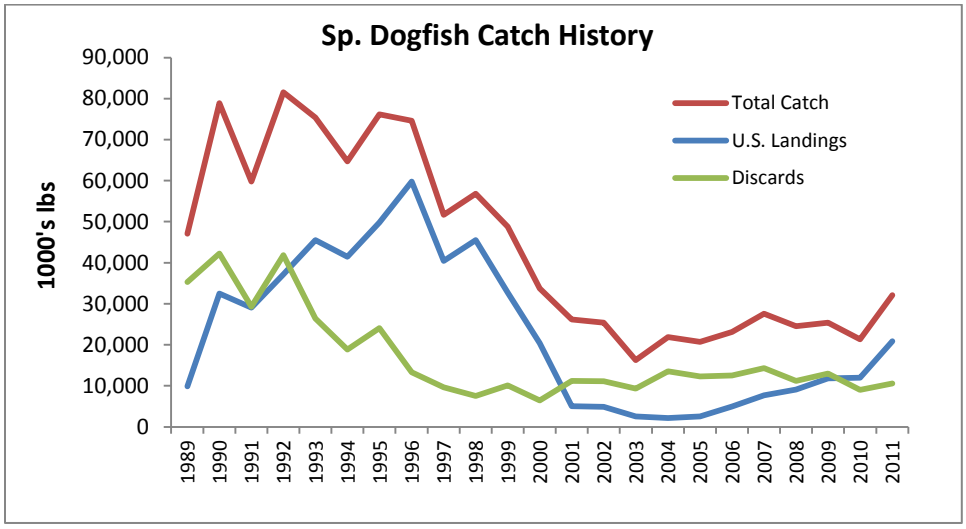

Figure 3. History of spiny dogfish landings and discards and total catch from 1989 – 2011. From NMFS 2012.

Table 3. Landings of spiny dogfish (1,000s lb) in the Northwest Atlantic Ocean for calendar years 1989 to 2011.

Year	US Comm	US Rec	Canada	Total (NW Atl.Stock)
1989	9,903	922	368	11,193
1990	32,476	395	2,886	35,757
1991	29,050	289	677	30,016
1992	37,166	474	1,914	39,554
1993	45,510	265	3,164	48,939
1994	41,442	342	4,012	45,796
1995	49,776	150	2,108	52,034
1996	59,825	55	950	60,830
1997	40,457	146	983	41,586
1998	45,477	86	2,326	47,889
1999	32,750	117	4,610	37,477
2000	20,923	11	6,043	26,977
2001	4,924	62	8,422	13,408
2002	4,653	452	7,901	13,006
2003	2,352	88	2,870	5,310
2004	2,070	231	5,207	7,508
2005	2,312	99	5,004	7,415
2006	5,222	207	5,377	10,806
2007	6,651	185	5,256	12,092
2008	9,098	472	3,466	13,036
2009	11,974	75	249	12,298
2010	12,702	35	13	12,750
2011	21,589	83	273	21,945

Source: NMFS Commercial Fisheries Database, MRFSS data, and NAFO data.

Coastwide Landings Relative to Limits (Quotas)

Table 3 provides the coastwide quotas and landings for the spiny dogfish fishery since the establishment of the FMP in 2000. Toward the end of the federal rebuilding schedule that ended in 2010, substantial increases in stock biomass allowed for an increase in the federal quota in 2009 to 12 M lb while still maintaining the rebuilding fishing mortality rate. Under the interstate FMP, quota increases began earlier in 2006 – 2008 (Table 3). Note that in 2010-2011, the commercial quota implemented in state waters was lower than for federal waters. Both quotas were based on the same technical advice, however, the state water quota reflects reductions for overages in accordance with Addendum 2 to the ISFMP. Similar accountability measures will be applied in federal waters in accordance with Amendment 2 to the federal FMP.

Table 2. Summary of spiny dogfish landings relative to the quota(s) for fishing years 2000 - 2011.

Fishing year (May 1 - Apr 30)	Quota (M lb)		Landings (M lb)
	Federal	States'	
2000	4.000	n/a	8.202
2001	4.000	n/a	5.103
2002	4.000	n/a	4.777
2003	4.000	8.8	3.341
2004	4.000	4.000	1.396
2005	4.000	4.000	2.417
2006	4.000	6.000	6.596
2007	4.000	6.000	6.424
2008	4.000	8.000	9.308
2009	12.000	12.000	12.307
2010	15.000	14.4	15.022
2011	20.000	19.5	22.451

** Total CFDBS landings (20.3 M lb) plus 2.2 M lb undocumented landings discovered/reported by MADMF*

Landings by Gear

Certain commercial gear types are associated with the retention of spiny dogfish in federal waters. The catch of spiny dogfish by gear in FY2011 is given in Table 4. Spiny dogfish landings came mostly from gillnets (73.69%), bottom otter trawls (14.54%), hook and line (11.27%), as well as unknown or other gear (0.50%).

Table 4. Commercial gear types associated with spiny dogfish harvest in FY2011. Note that vessels with state issued permits only are not required to complete VTRs so total VTR landings are less than total dealer-reported landings.

Commercial Gear Type	Landings (lb)	Pct Total
GILL NET	10,624,734	73.69%
TRAWL, OTTER, BOTTOM	2,096,904	14.54%
HOOK AND LINE	1,625,051	11.27%
OTHER	71,836	0.50%
TOTAL	**14,418,525**	**100.00%**

Source: Vessel Trip Reports

Landings by Area

The Northeast Region is divided into 46 statistical areas for federal fisheries management (Figure 4). According to VTR data, six statistical areas collectively accounted for 79.10 % of spiny dogfish landings in 2011, with each contributing greater than 5.0 % of the total (Table 5). These areas also represented 76.30% of the trips that landed spiny dogfish suggesting that resource availability as expressed by catch per trip is fairly consistent through the range where harvest occurs.

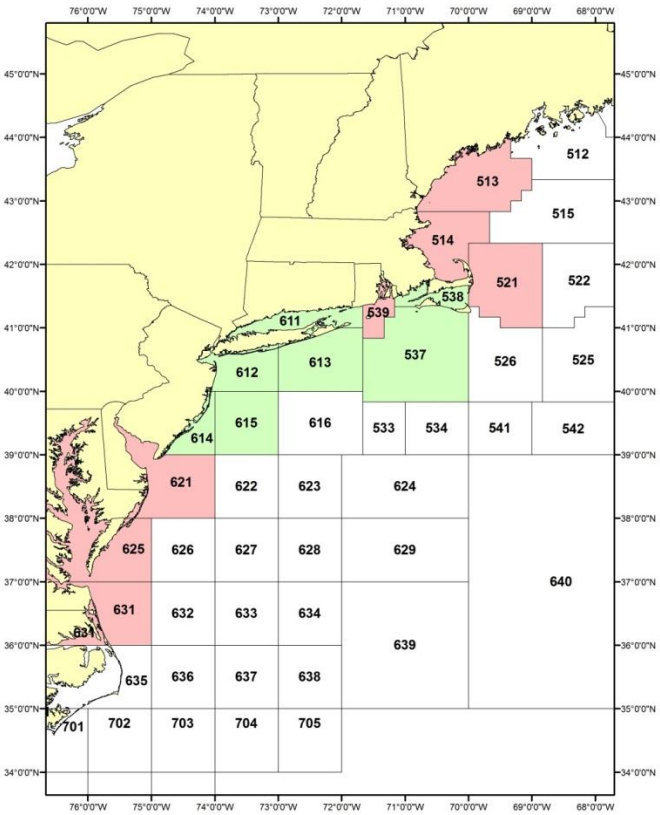

Figure 4. NMFS Northeast statistical areas. Shaded areas indicate where spiny dogfish harvest occurs. Red areas comprise 5% or more of harvest and green areas 1% to 5% of harvest.

Table 5. Statistical areas that accounted for at least 5 % of the spiny dogfish landings and/or trips in FY2011 VTR data. Shading (red or green) is provided for reference with Figure 4.

Statistical Area	Landings (%)	Trips (%)
514	23.6%	24.0%
521	19.3%	19.3%
513	12.7%	17.1%
631	7.4%	4.1%
539	5.8%	5.8%
621	5.3%	3.1%
625	5.0%	2.9%
612	4.1%	4.7%
537	3.7%	4.3%
615	3.7%	3.2%
614	2.8%	2.7%
611	2.2%	3.1%
613	2.1%	2.8%
538	1.6%	1.1%

Source: Vessel Trip Report database

Canadian Commercial Spiny Dogfish Landings

Historic Canadian commercial landings have been low relative to landings from the U.S. commercial fishery (Table 2). In 2001, following the implementation of the U.S. Federal FMP, Canadian landings exceeded U.S. landings for the first time. In 2008, Canadian landings were about 3.5 M lb, but in 2009 landings dropped precipitously to about 250,000 lb. In 2010, the increased availability of U.S. spiny dogfish continued to constrain demand for Canadian product (pers. comm. Barndollar[1] and Marder[2] 2011) even though Canada has allowed a directed fishery under a 2,500 mt (5.512 M lb) quota with no trip limits. In 2010 Canadian landings dropped further to 13,000 lb and remained low in 2011 at 273,000 lb.

Recreational Landings

As previously stated, no significant recreational fishery exists for spiny dogfish. Some retention of recreationally caught spiny dogfish does occur, however. Recreational landings by state for 2011 are provided in Table 6 below.

[1] Steve Barndollar was on the MAFMC's Spiny Dogfish Advisory Panel through 2011 and is the owner of Seatrade Int'l, one of the primary processors of U.S. and Canadian spiny dogfish on the Atlantic Coast.

[2] Brian Marder is the owner of Marder Trawling, Inc., a major processor of U.S. and Canadian spiny dogfish on the Atlantic Coast.

Table 6. Recreational landings (lb) of spiny dogfish by state for 2011.

State	Landings (lb)	Pct of Total
VIRGINIA	35,695	42.9%
NEW JERSEY	17,608	21.2%
NORTH CAROLINA	8,294	10.0%
MASSACHUSETTS	7,467	9.0%
DELAWARE	4,439	5.3%
MAINE	3,651	4.4%
NEW HAMPSHIRE	3,497	4.2%
RHODE ISLAND	2,338	2.8%
TOTAL	**34,574**	**100.00%**

Source: Marine Recreational Fisheries Statistical Survey Data

6.1.3 Non-Target Species

Discards of non-target species in the directed spiny dogfish fishery are difficult to characterize since defining the directed fishery can be done a number of ways. Gear-specific landings data suggest that catch composition varies among gears and that some gear (e.g., bottom longline) are more likely to produce catches that are predominantly spiny dogfish, while other gear (e.g., bottom trawls) are characterized by a more diverse catch. Observed discards have been tabulated for observed trips in 2011 where any dogfish were retained and are summarized in Table 7. The table does NOT provide an estimate of the total discards associated with landing spiny dogfish. The ordering of discards by species is likely to reflect the relative discarding levels but the overall magnitude of discards is unknown.

On gillnet trips, spiny dogfish comprised 61.09% of total observed discards, with other major discard species including lobster (11.20%), and winter skate (5.35%), and seven other species comprising between 1% and 5% of discards (Table 7) with 56 other species less than 1% each, but in aggregate 6.70% of total discards.

On observed bottom longline trips, a total of 19 species besides spiny dogfish were accounted for in the discards. Atlantic cod comprised 29.90% of discards, spiny dogfish 28.30%, thorny skate 27.90%, and five other species comprising between 1% and 5% of discards (Table 7) and twelve other species less than 1% each, but in aggregate 3.40% of total discards.

On observed trawl trips, spiny dogfish comprised 30.41% of discards, little skate 13.36%, and winter skate 10.36%, and red hake 5.13%. Thirteen other species comprised between 1 and 5% of discards (Table 7), and 92 additional discard species were less than 1% each, but in aggregate, 13.90% of total discards.

The species composition would likely be different if only trips that directed on spiny dogfish were considered. Those trips represent a subset of the trips where any amount of spiny dogfish was landed and would likely include a smaller suite of bycatch species.

Table 7. Observed discards associated with the dominant gear types used to harvest spiny dogfish in Fishing Year 2011 as reported in northeast fisheries observer program (NEFOP) data when any spiny dogfish were landed. Species comprising 1% or more of the observed discards by gear are shown. Stock status for each discard species is also indicated (see below)

Hook and Line			Gill Net, Sink			Trawl, Otter, Bottom		
Discard Species	**Discards (lb)**	**Pct Of Total for this Gear**	**Discard Species**	**Discards (lb)**	**Pct Of Total for this Gear**	**Discard Species**	**Discards (lb)**	**Pct Of Total for this Gear**
COD, ATLANTIC [d,e]	955	29.90%	DOGFISH, SPINY [a,b]	53,272	61.09%	DOGFISH, SPINY [a,b]	111,986	30.41%
DOGFISH, SPINY [a,b]	905	28.30%	LOBSTER [a,b]	9,770	11.20%	SKATE, LITTLE [a,b]	49,211	13.36%
SKATE, THORNY [a,d]	893	27.90%	SKATE, WINTER [a,b]	6,995	8.02%	SKATE, WINTER [a,b]	38,136	10.36%
SKATE, WINTER [a,b]	99	3.10%	SKATE, BARNDOOR [a,b]	2,249	2.58%	HAKE, RED [a,b]	18,891	5.13%
BASS, STRIPED[A,B]	75	2.30%	MONKFISH [a,b]	2,196	2.52%	SKATE, NK [n/a]	17,701	4.81%
LOBSTER [a,b]	72	2.30%	SKATE, THORNY [a,d]	1,712	1.96%	HAKE, SILVER [a,b]	16,420	4.46%
SKATE, BARNDOOR [a,b]	48	1.50%	SKATE, LITTLE [a,b]	1,526	1.75%	CRAB, HORSESHOE[C,F]	11,924	3.24%
OCEAN POUT [d,b]	41	1.30%	RAVEN, SEA [n/a]	1,339	1.54%	HAKE, SPOTTED[n/a]	7,900	2.15%
OTHER (12 sp.)	108	3.40%	BLUEFISH [a,b]	1,217	1.40%	SCALLOP, SEA [a,b]	5,868	1.59%
			COD, ATLANTIC [d,e]	1,063	1.22%	FLOUNDER, WINTER [mixed - a,d,b]	5,746	1.56%
			OTHER (56 sp.)	5.866	6.70%	STARFISH, SEASTAR,NK [n/a]	5,559	1.51%
						SKATE, BARNDOOR [a,b]	5,543	1.51%
						BUTTERFISH [a,d]	5,513	1.50%
						LOBSTER [a,b]	4,962	1.35%
						FLOUNDER, WINDOWPANE[d,e]	3,997	1.09%
						FLOUNDER, SUMMER [a,b]	3,850	1.05%
						FLOUNDER, FOURSPOT [n/a]	3,821	1.04%
						OTHER (92 sp.)	51,244	13.90%
Total	**3,088**	**100%**	**Total**	**81,339**	**100%**	**Total**	**368,271**	**100%**

[a] not overfished, [b] overfishing not occurring, [c] overfished is unknown, [d] overfished, [e] overfishing is occurring, [f] overfishing unknown, [n/a] not applicable; [A,B] not overfished, no overfishing (ASMFC), [C,F] status unknown (ASMFC)

Source: Northeast Fishery Observer Program, 3rd Quarter 2012 NMFS Fish Stock Sustainability Index

6.2 Habitat (Including Essential Fish Habitat)

A description of the habitat associated with the spiny dogfish fishery is presented in Section 2.2 of the FMP (MAFMC 1999), and a brief summary of that information is given here. The impact of fishing on spiny dogfish habitat (and EFH) as well as the impact of the fishery on other species' habitats and EFH can also be found in Section 2.2 of the FMP (MAFMC 1999). Potential impacts on habitat (including EFH) associated with the actions proposed in this specifications document are discussed in section 7.2.

6.2.1 Physical Environment

A characterization of the physical environment of the Northeast U.S. Shelf was provided in Section 6.2 of the 2011 specifications document (MAFMC 2011). An additional inventory of the physical and biological characteristics of specific habitats found within the jurisdiction of the Northeast Region can be found in Stevenson et al. (2004). Spiny dogfish are not associated with any particular substrate type or submerged aquatic vegetation (SAV; NMFS 2007). Temperature (3 – 18˚C) and salinity (30-35 ppt) associations have been observed in surveys that catch spiny dogfish juveniles and adults (NMFS 2007).

The Northeast U.S. Shelf Ecosystem has been described as including the area from the Gulf of Maine south to Cape Hatteras, extending from the coast seaward to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream. The continental slope includes the area east of the shelf, out to a depth of 2000 m. Four distinct sub-regions comprise the NOAA Fisheries Northeast Region: the Gulf of Maine, Georges Bank, the Mid-Atlantic Bight, and the continental slope.

The Gulf of Maine is an enclosed coastal sea, characterized by relatively cold waters and deep basins, with a patchwork of various sediment types. Georges Bank is a relatively shallow coastal plateau that slopes gently from north to south and has steep submarine canyons on its eastern and southeastern edge. It is characterized by highly productive, well-mixed waters and strong currents. The Mid-Atlantic Bight is comprised of the sandy, relatively flat, gently sloping continental shelf from southern New England to Cape Hatteras, NC. The continental slope begins at the continental shelf break and continues eastward with increasing depth until it becomes the continental rise. It is fairly homogenous, with exceptions at the shelf break, some of the canyons, the Hudson Shelf Valley, and in areas of glacially rafted hard bottom.

6.2.2 Essential Fish Habitat (EFH)

Information on spiny dogfish habitat requirements can be found in the documents titled, "Essential Fish Habitat Source Document: Spiny Dogfish, *Squalus acanthias*, Life History and Habitat Characteristics" (Stehlik 2007). Electronic versions of these source documents are available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/. The current EFH designation definitions by life history stage for spiny dogfish are available at the following website: http://www.nero.noaa.gov/hcd/list.htm.

For juvenile spiny dogfish, EFH is defined as: 1) North of Cape Hatteras, the waters of the Continental shelf from the Gulf of Maine through Cape Hatteras, North Carolina in areas that encompass the highest 90% of all ranked ten minute squares for the area where juvenile dogfish were collected in the NEFSC trawl surveys. 2) South of Cape Hatteras, the waters over the Continental Shelf from Cape Hatteras, North Carolina through Cape Canaveral, Florida, to depths of 1280 ft. 3) Inshore, the "seawater" portions of the estuaries where dogfish are common or abundant on the Atlantic coast, from Passamaquoddy Bay, Maine to Cape Cod Bay, Massachusetts. Generally, juvenile dogfish are found at depths of 33 to 1280 ft in water temperatures ranging between 37ºF and 82ºF.

For adults: 1) North of Cape Hatteras, EFH is the waters of the Continental shelf from the Gulf of Maine through Cape Hatteras, North Carolina in areas that encompass the highest 90% of all ranked ten minute squares for the area where adult dogfish were collected in the NEFSC trawl surveys. 2) South of Cape Hatteras, EFH is the waters over the Continental Shelf from Cape Hatteras, North Carolina through Cape Canaveral, Florida, to depths of 1476 ft. 3) Inshore, EFH is the "seawater" portions of the estuaries where dogfish are common or abundant on the Atlantic coast, from Passamaquoddy Bay, Maine to Cape Cod Bay, Massachusetts. Generally, adult dogfish are found at depths of 33 to 1476 ft in water temperatures ranging between 37ºF and 82ºF.

6.2.3 Fishery Impact Considerations

A baseline fishing effects analysis is provided in the FMP (MAFMC 1999). The evaluation of the habitat impacts of bottom otter trawls, gillnets, and longlines used in the commercial spiny dogfish fishery indicated that the baseline impact of the fishery was minimal and temporary in nature. Consequently, adverse effects of the spiny dogfish fishery on EFH did not need to be minimized. Since a combined 85% of spiny dogfish landings in fishing year 2011 were from gillnets (74 %) and longlines (11%), and trawl landings (15%) tend to be non-directed, the adverse impacts of the spiny dogfish fishery have continued to be minimal during 2011. Potential impacts of the proposed 2013 - 2015 commercial quota are evaluated in section 7.1 of this EA.

6.3 ESA Listed Species and MMPA Protected Species

There are numerous species that inhabit the environment within the Spiny Dogfish FMP management unit, and that therefore potentially occur in the operations area of the spiny dogfish fisheries, that are afforded protection under the Endangered Species Act of 1973 (ESA; i.e., for those designated as threatened or endangered) and/or the Marine Mammal Protection Act of 1972 (MMPA), and are under NMFS' jurisdiction. Seventeen species are classified as endangered or threatened under the ESA, three others are candidate species under the ESA, while the remainder are protected by the provisions of the MMPA.

6.3.1 Species Present in the Area

Table 8 lists the species, protected either by the ESA, the MMPA, or both, that may be found in the environment that would be utilized by the fishery. Table 12 also includes three candidate fish species as identified under the ESA. Candidate species are those petitioned species that are actively being considered for listing as endangered or threatened under the ESA, as well as those species for which NMFS has initiated an ESA status review that it has announced in the *Federal Register*.

Table 8. Species protected under the Endangered Species Act and Marine Mammal Protection Act that may occur in the operations area for the spiny dogfish fishery.

Species	Common name	Scientific Name	Status
Whales	Northern right	*Eubalaena glacialis*	Endangered
	Humpback	*Megaptera novaeangliae*	Endangered
	Fin	*Balaenoptera physalus*	Endangered
	Blue	*Balaenoptera musculus*	Endangered
	Sei	*Balaenoptera borealis*	Endangered
	Sperm	*Physeter macrocephalus*	Endangered
Sea Turtles	Leatherback	*Dermochelys coriacea*	Endangered
	Kemp's ridley	*Lepidochelys kempii*	Endangered
	Green[1]	*Chelonia mydas*	Threatened
	Hawksbill	*Eretmochelys imbricata*	Endangered
	Loggerhead[2]	*Caretta caretta*	Threatened
Fishes	Shortnose sturgeon	*Acipenser brevirostrum*	Endangered
	Atlantic salmon	*Salmo salar*	Endangered
	Smalltooth sawfish	*Pristis pectinata*	Endangered
	Atlantic sturgeon[3]	*Acipenser oxyrinchus*	Endangered; Threatened
	Cusk	*Brosme brosme*	Candidate
	Alewife	*Alosa pseudoharengus*	Candidate
	Blueback herring	*Alosa aestivalis*	Candidate
	Scalloped hammerhead	*Sphyrna lewini*	Candidate

[1] Florida & Mexico's Pacific coast breeding populations are endangered; populations in all other areas listed as threatened.
[2] Northwest Atlantic distinct population segment (DPS) of loggerhead turtles.
[3] The Gulf of Maine DPS is listed as threatened, while the New York Bight, Chesapeake Bay, Carolina, and South Atlantic populations are listed as endangered.

A status review for Atlantic sturgeon was completed in 2007 which indicated that five distinct population segments (DPS) of Atlantic sturgeon exist in the United States (ASSRT 2007). On October 6, 2010, NMFS proposed listing these five DPSs of Atlantic sturgeon along the U.S. East Coast as either threatened or endangered species (75 FR 61872 and 75 FR 61904). A final listing was published on February 6th, 2012 (77 FR 5880 and 75 FR 5914). The GOM DPS of Atlantic sturgeon has been listed as threatened, and the New York Bight, Chesapeake Bay, Carolina, and South Atlantic DPSs of Atlantic sturgeon have been listed as endangered. Atlantic sturgeon from any of the five DPSs could occur in areas where the multispecies fishery operates. Atlantic sturgeon have been captured in small mesh otter trawl gear, albeit less often than in large mesh otter trawl gear (Stein et al. 2004a, ASMFC 2007).

Candidate species receive no substantive or procedural protection under the ESA; however, NMFS recommends that project proponents consider implementing conservation actions to limit the potential for adverse effects on candidate species from any proposed project. NMFS has initiated review of recent stock assessments, bycatch information, and other information for these candidate and proposed species. The results of those efforts are needed to accurately characterize recent interactions between fisheries and the candidate/proposed species in the context of stock sizes. Any conservation measures deemed appropriate for these species will follow the information reviews. Please note that once a species is proposed for listing the conference provisions of the ESA apply (see 50 CFR 402.10).

6.3.2 Species Potentially Affected

The multispecies fishery has the potential to affect the sea turtle, cetacean, and pinniped species discussed below. A number of documents contain background information on the range-wide status of sea turtle and marine mammal species that occur in the area and are known or suspected of interacting with fishing gear (demersal gear including trawls, gillnets, and bottom longlines). These documents include sea turtle status reviews and biological reports (NMFS and USFWS 1995; Turtle Expert Working Group 1998, 2000, 2007, 2009; NMFS and USFWS 2007a, 2007b, recovery plans for ESA-listed cetaceans and sea turtles (NMFS 1991, 2005; NMFS and USFWS 1991a, 1991b; NMFS and USFWS 1992), the marine mammal stock assessment reports (e.g., Waring et al. 1995---2011), and other publications (e.g., Clapham et al. 1999, Perry et al. 1999, Best et al. 2001, Perrin et al. 2002).

6.3.2.1 Sea Turtles

Loggerhead, leatherback, Kemp's ridley, and green sea turtles occur seasonally in southern New England and Mid-Atlantic continental shelf waters north of Cape Hatteras, North Carolina. Turtles generally move up the coast from southern wintering areas as water temperatures warm in the spring (James et al. 2005, Morreale and Standora 2005, Braun-McNeill and Epperly 2004, Morreale and Standora 1998, Musick and Limpus 1997, Shoop and Kenney 1992, Keinath et al. 1987). A reversal of this trend occurs in the fall when water temperatures cool. Turtles pass Cape Hatteras by December and return to more southern waters for the winter (James et al. 2005, Morreale and Standora 2005, Braun-McNeill and Epperly 2004, Morreale and Standora 1998, Musick and Limpus 1997, Shoop and Kenney 1992, Keinath et al. 1987). Hard-shelled species typically occur as far north as Cape Cod whereas the more cold-tolerant leatherbacks occur in more northern Gulf of Maine waters in the summer and fall (Shoop and Kenney 1992, STSSN database http://www.sefsc.noaa.gov/seaturtleSTSSN.jsp).

On March 16, 2010, NMFS and USFWS published a proposed rule (75 FR 12598) to divide the worldwide population of loggerhead sea turtles into nine DPSs, as described in the 2009 Status Review. Two of the DPSs were proposed to be listed as threatened and seven of the DPSs, including the Northwest Atlantic Ocean DPS, were proposed to be listed as endangered. NMFS and the USFWS accepted comments on the proposed rule through September 13, 2010 (June 2, 2010, 75 FR 30769). On March 22, 2011 (76 FR 15932), NMFS and USFWS extended the date by which a final determination on the listing action will be made to no later than September 16, 2011. This action was taken to address the interpretation of the existing data on status and trends and its relevance to the assessment of risk of extinction for the Northwest Atlantic Ocean DPS, as well as the magnitude and immediacy of the fisheries bycatch threat and measures to reduce this threat. New information or analyses to help clarify these issues were requested by April 11, 2011.

On September 22, 2011, NMFS and USFWS issued a final rule (76 FR 58868), determining that the loggerhead sea turtle is composed of nine DPSs (as defined in Conant et al., 2009) that constitute species that may be listed as threatened or endangered under the ESA. Five DPSs were listed as endangered (North Pacific Ocean, South Pacific Ocean, North Indian Ocean, Northeast Atlantic Ocean, and Mediterranean Sea), and four DPSs were listed as threatened (Northwest Atlantic Ocean, South Atlantic Ocean, Southeast Indo-Pacific Ocean, and Southwest Indian Ocean). Note that the Northwest Atlantic Ocean (NWA) DPS and the Southeast Indo-Pacific Ocean DPS were original proposed as endangered. The NWA DPS was determined to be threatened based on review of nesting data available after the proposed rule was published, information provided in public comments on the proposed rule, and further discussions within the agencies. The two primary factors considered were population abundance and population trend. NMFS and USFWS found that an endangered status for the NWA DPS was not warranted given the large size of the nesting population, the overall nesting population remains widespread, the trend for the nesting population appears to be stabilizing, and substantial conservation efforts are underway to address threats.

The September 2011 final rule also noted that critical habitat for the two DPSs occurring within the U.S. (NWA DPS and North Pacific DPS) will be designated in a future rulemaking. Information from the public related to the identification of critical habitat, essential physical or biological features for this species, and other relevant impacts of a critical habitat designation was solicited.

This proposed action only occurs in the Atlantic Ocean. As noted in Conant et al. (2009), the range of the four DPSs occurring in the Atlantic Ocean are as follows: NWA DPS – north of the equator, south of 60° N latitude, and west of 40° W longitude; Northeast Atlantic Ocean (NEA) DPS – north of the equator, south of 60° N latitude, east of 40° W longitude, and west of 5° 36' W longitude; South Atlantic DPS – south of the equator, north of 60° S latitude, west of 20° E longitude, and east of 60° W longitude; Mediterranean DPS – the Mediterranean Sea east of 5° 36' W longitude. These boundaries were determined based on oceanographic features, loggerhead sightings, thermal tolerance, fishery bycatch data, and information on loggerhead distribution from satellite telemetry and flipper tagging studies. Sea turtles from the NEA DPS are not expected to be present over the North American continental shelf in U.S. coastal waters, where the proposed action occurs (P. Dutton, NMFS, personal communication, 2011). Previous literature (Bowen et al. 2004) has suggested that there is the potential, albeit small, for some juveniles from the Mediterranean DPS to be present in U.S. Atlantic coastal foraging grounds. These data should be interpreted with caution however, as they may be representing a shared

common haplotype and lack of representative sampling at Eastern Atlantic rookeries. Given that updated, more refined analyses are ongoing and the occurrence of Mediterranean DPS juveniles in U.S. coastal waters is rare and uncertain, if even occurring at all, for the purposes of this assessment we are making the determination that the Mediterranean DPS is not likely to be present in the action area. Sea turtles of the South Atlantic DPS do not inhabit the action area of this subject fishery (Conant et al. 2009). As such, the remainder of this assessment will only focus on the NWA DPS of loggerhead sea turtles, listed as threatened.

In general, sea turtles are a long-lived species and reach sexual maturity relatively late (NMFS SEFSC 2001; NMFS and USFWS 2007a, 2007b, 2007c, 2007d). Sea turtles are injured and killed by numerous human activities (NRC 1990; NMFS and USFWS 2007a, 2007b, 2007c, 2007d). Nest count data are a valuable source of information for each turtle species since the number of nests laid reflects the reproductive output of the nesting group each year. A decline in the annual nest counts has been measured or suggested for four of five western Atlantic loggerhead nesting groups through 2004 (NMFS and USFWS 2007a), however, data collected since 2004 suggests nest counts have stabilized or increased (TEWG 2009). Nest counts for Kemp's ridley sea turtles as well as leatherback and green sea turtles in the Atlantic demonstrate increased nesting by these species (NMFS and USFWS 2007b, 2007c, 2007d).

6.3.2.2 Large Cetaceans

The most recent Marine Mammal Stock Assessment Report (SAR) (Waring et al. 2010) reviewed the current population trend for each of these cetacean species within U.S. Economic Exclusion Zone (EEZ) waters. The SAR also estimated annual human-caused mortality and serious injury. Finally, it described the commercial fisheries that interact with each stock in the U.S. Atlantic. The following paragraphs summarize information from the SAR.

The western North Atlantic baleen whale species (North Atlantic right, humpback, fin, sei, and minke whales) follow a general annual pattern of migration. They migrate from high latitude summer foraging grounds, including the Gulf of Maine and Georges Bank, to and latitude winter calving grounds (Perry et al. 1999, Kenney 2002). However, this is a simplification of species movements as the complete winter distribution of most species is unclear (Perry et al. 1999, Waring et al. 2011). Studies of some of the large baleen whales (right, humpback, and fin) have demonstrated the presence of each species in higher latitude waters even in the winter (Swingle et al. 1993, Wiley et al. 1995, Perry et al. 1999, Brown et al. 2002). Blue whales are most often sighted along the east coast of Canada, particularly in the Gulf of St. Lawrence. They occur only infrequently within the U.S. EEZ (Waring et al. 2002).

Available information suggests that the North Atlantic right whale population increased at a rate of 1.8 percent per year between 1990 and 2005. The total number of North Atlantic right whales is estimated to be at least 361 animals in 2005 (Waring et al. 2011). The minimum rate of annual human-caused mortality and serious injury to right whales averaged 2.8 mortality or serious injury incidents per year during 2004 to 2008 (Waring et al. 2011). Of these, fishery interactions resulted in an average of 0.8 mortality or serious injury incidents per year.

The North Atlantic population of humpback whales is conservatively estimated to be 7,698 (Waring et al. 2011). The best estimate for the GOM stock of humpback whale population is 847 whales (Waring et al. 2011). Based on data available for selected areas and time periods, the minimum population estimates for other western North Atlantic whale stocks are 3,269 fin

whales, 208 sei whales (Nova Scotia stock), 3,539 sperm whales, and 6,909 minke whales (Waring et al. 2009). Current data suggest that the GOM humpback whale stock is steadily increasing in size (Waring 2011). Insufficient information exist to determine trends for these other large whale species.

Recent revisions to the Atlantic Large Whale Take Reduction Plan (ALWTRP) (72 FR 57104, October 5, 2007) continue to address entanglement risk of large whales (right, humpback, and fin whales, and acknowledge benefits to minke whales) in commercial fishing gear. The revisions seek to reduce the risk of death and serious injury from entanglements that do occur.

6.3.2.3 Small Cetaceans

There is anthropogenic mortality of numerous small cetacean species (dolphins, pilot whales, and harbor porpoise) in Northeast multispecies fishing gear. Seasonal abundance and distribution of each species off the coast of the Northeast U.S. varies with respect to life history characteristics. Some species such as white-sided dolphin and harbor porpoise primarily occupy continental shelf waters. Other species such as the Risso's dolphin occur primarily in continental shelf edge and slope waters. Still other species like the common dolphin and the spotted dolphin occupy all three habitats. Waring et al. (2009) summarizes information on the western North Atlantic stocks of each species.

6.3.2.4 Pinnipeds

Harbor seals have the most extensive distribution of the four species of seal expected to occur in the area. Harbor seals sighting have occurred far south as 30° N (Katona et al. 1993, Waring et al. 2009). Gray seals are the second most common seal species in U.S. EEZ waters. They occur primarily in waters off of New England (Katona et al. 1993; Waring et al. 2009). Pupping for both species occurs in both U.S. and Canadian waters of the western North Atlantic. Although there are at least three gray seal pupping colonies in U.S., the majority of harbor seal pupping likely occurs in U.S. waters and the majority of gray seal pupping likely occurs in Canadian waters. Observations of harp and hooded seals are less common in U.S. EEZ waters. Both species form aggregations for pupping and breeding off eastern Canada in the late winter/early spring. They then travel to more northern latitudes for molting and summer feeding (Waring et al. 2006). Both species have a seasonal presence in U.S. waters from Maine to New Jersey, based on sightings, stranding, and fishery bycatch information (Waring et al. 2009).

6.3.2.5 Atlantic Sturgeon

Atlantic sturgeon is an anadromous species that spawns in relatively low salinity, river environments, but spends most of its life in the marine and estuarine environments from Labrador, Canada to the Saint Johns River, Florida (Holland and Yelverton 1973, Dovel and Berggen 1983, Waldman et al. 1996, Kynard and Horgan 2002, Dadswell 2006, ASSRT 2007). Tracking and tagging studies have shown that subadult and adult Atlantic sturgeon that originate from different rivers mix within the marine environment, utilizing ocean and estuarine waters for life functions such as foraging and overwintering (Stein et al. 2004a, Dadswell 2006, ASSRT 2007, Laney et al. 2007, Dunton et al. 2010). Fishery-dependent data as well as fishery-independent data demonstrate that Atlantic sturgeon use relatively shallow inshore areas of the continental shelf; primarily waters less than 50 m (Stein et al. 2004b, ASMFC 2007, Dunton et al. 2010). The data also suggest regional differences in Atlantic sturgeon depth distribution with

sturgeon observed in waters primarily less than 20 m in the Mid-Atlantic Bight and in deeper waters in the Gulf of Maine (Stein et al. 2004b, ASMFC 2007, Dunton et al. 2010). Information on population sizes for each Atlantic sturgeon DPS is very limited. Based on the best available information, NMFS has concluded that bycatch, vessel strikes, water quality and water availability, dams, lack of regulatory mechanisms for protecting the fish, and dredging are the most significant threats to Atlantic sturgeon.

Comprehensive information on current abundance of Atlantic sturgeon is lacking for all of the spawning rivers (ASSRT 2007). Based on data through 1998, an estimate of 863 spawning adults per year was developed for the Hudson River (Kahnle et al. 2007), and an estimate of 343 spawning adults per year is available for the Altamaha River, GA, based on data collected in 2004-2005 (Schueller and Peterson 2006). Data collected from the Hudson River and Altamaha River studies cannot be used to estimate the total number of adults in either subpopulation, since mature Atlantic sturgeon may not spawn every year, and it is unclear to what extent mature fish in a non-spawning condition occur on the spawning grounds. Nevertheless, since the Hudson and Altamaha Rivers are presumed to have the healthiest Atlantic sturgeon subpopulations within the United States, other U.S. subpopulations are predicted to have fewer spawning adults than either the Hudson or the Altamaha (ASSRT 2007). It is also important to note that the estimates above represent only a fraction of the total population size as spawning adults comprise only a portion of the total population (e.g., this estimate does not include subadults and early life stages).

Since the ESA listing of Atlantic sturgeon, new stock assessment efforts have been completed (Kocik et al. 2013). Atlantic sturgeon are frequently sampled during the Northeast Area Monitoring and Assessment (NEAMAP) survey. NEAMAP has been conducting trawl surveys from Cape Cod, Massachusetts to Cape Hatteras, North Carolina in nearshore waters at depths to 18.3 meters (60 feet) during the fall since 2007 and depths up to 36.6 meters (120 feet) during the spring since 2008 using a spatially stratified random design with a total of 35 strata and 150 stations per survey. The information from this survey can be directly used to calculate minimum swept area population estimates during the fall, which range from 6,980 to 42,160 with coefficients of variation between 0.02 and 0.57 and during the spring, which range from 25,540 to 52,990 with coefficients of variation between 0.27 and 0.65. These are considered minimum estimates because the calculation makes the unlikely assumption that the gear will capture 100% of the sturgeon in the water column along the tow path. Efficiencies less than 100% will result in estimates greater than the minimum. The true efficiency depends on many things including the availability of the species to the survey and the behavior of the species with respect to the gear. True efficiencies much less than 100% are common for most species. The 50% efficiency assumption seems to reasonably account for the robust, yet not complete sampling of the Atlantic sturgeon oceanic temporal and spatial ranges and the documented high rates of encounter with NEAMAP survey gear and Atlantic sturgeon. For this analysis, we have determined that the best available data at this time are the population estimates derived from NEAMAP swept area biomass. We have determined that using the median value of the 50% efficiency as the best estimate of the Atlantic sturgeon ocean population is most appropriate at this time. This results in a total population size estimate of 67,776 fish, which is considerably higher than the estimates that were available at the time of listing (Kocik et al. 2013).

6.3.2.6 Species Not Likely to be Affected

NMFS has determined that the action being considered in this EA is not likely to adversely affect shortnose sturgeon, the Gulf of Maine distinct population segment (DPS) of Atlantic salmon, hawksbill sea turtles, blue whales, or sperm whales, all of which are listed as endangered species under the ESA. Further, the action considered in this EA is not likely to adversely affect North Atlantic right whale (discussed in Section 4.4.2.2) critical habitat. The following discussion provides the rationale for these determinations.

Shortnose sturgeon are benthic fish that mainly occupy the deep channel sections of large rivers. They occupy rivers along the western Atlantic coast from St. Johns River in Florida, to the Saint John River in New Brunswick, Canada. Although, the species is possibly extirpated from the Saint Johns River system. The species is anadromous in the southern portion of its range (i.e., south of Chesapeake Bay), while some northern populations are amphidromous (NMFS 1998). Since sectors would not operate in or near the rivers where concentrations of shortnose sturgeon are most likely found, it is highly unlikely that sectors would affect shortnose sturgeon.

The wild populations of Atlantic salmon are listed as endangered under the ESA. Their freshwater range occurs in the watersheds from the Androscoggin River northward along the Maine coast to the Dennys River. Juvenile salmon in New England rivers typically migrate to sea in spring after a one- to three-year period of development in freshwater streams. They remain at sea for two winters before returning to their U.S. natal rivers to spawn (Kocik and Sheehan 2006). Results from a 2001-2003 post-smolt trawl survey in the nearshore waters of the Gulf of Maine indicate that Atlantic salmon post-smolts are prevalent in the upper water column throughout this area in mid to late May (Lacroix, Knox, and Stokesbury 2005). Therefore, commercial fisheries deploying small-mesh active gear (pelagic trawls and purse seines within 10 m of the surface) in nearshore waters of the Gulf of Maine may have the potential to incidentally take smolts. However, it is highly unlikely that the action being considered will affect the Gulf of Maine DPS of Atlantic salmon given that operation of the multispecies fishery does not occur in or near the rivers where concentrations of Atlantic salmon are likely to be found. Additionally, multispecies gear operates in the ocean at or near the bottom rather than near the surface where Atlantic salmon are likely to occur. Thus, this species will not be considered further in this EA.

North Atlantic right whales occur in coastal and shelf waters in the western North Atlantic (NMFS 2005). Section 4.4.2.2 discusses potential fishery entanglement and mortality interactions with North Atlantic right whale individuals. The western North Atlantic population in the U.S. primarily ranges from winter calving and nursery areas in coastal waters off the southeastern U.S. to summer feeding grounds in New England waters (NMFS 2005). North Atlantic Right Whales use five well-known habitats annually, including multiple in northern waters. These northern areas include the Great South Channel (east of Cape Cod); Cape Cod and Massachusetts Bays; the Bay of Fundy; and Browns and Baccaro Banks, south of Nova Scotia. NMFS designated the Great South Channel and Cape Cod and Massachusetts Bays as Northern Atlantic right whale critical habitat in June 1994 (59 FR 28793). NMFS has designated additional critical habitat in the southeastern U.S. Multispecies gear operates in the ocean at or near the bottom rather than near the surface. It is not known whether the bottom-trawl, or any other type of fishing gear, has an impact on the habitat of the Northern right whale (59 FR 28793). As discussed in the FY 2010 and FY 2011 sector EAs and further in Section 5.0, sectors would result in a negligible effect on physical habitat. Therefore, FY 2012 sector operations

would not result in a significant impact on Northern right whale critical habitat. Further, mesh sizes used in the multispecies fishery do not significantly impact the Northern right whale's planktonic food supply (59 FR 28793). Therefore, Northern right whale food sources in areas designated as critical habitat would not be adversely affected by sectors. For these reasons, Northern right whale critical habitat will not be considered further in this EA.

The hawksbill turtle is uncommon in the waters of the continental U.S. Hawksbills prefer coral reefs, such as those found in the Caribbean and Central America. Hawksbills feed primarily on a wide variety of sponges, but also consume bryozoans, coelenterates, and mollusks. The Culebra Archipelago of Puerto Rico contains especially important foraging habitat for hawksbills. Nesting areas in the western North Atlantic include Puerto Rico and the Virgin Islands. There are accounts of hawksbills in south Florida and individuals have been sighted along the east coast as far north as Massachusetts; however, east coast sightings north of Florida are rare (NMFS 2009a). Operations in the NE multispecies fishery would not occur in waters that are typically used by hawksbill sea turtles. Therefore, it is highly unlikely that fishery operations would affect this turtle species.

Blue whales do not regularly occur in waters of the U.S. EEZ (Waring et al. 2002). In the North Atlantic region, blue whales are most frequently sighted from April to January (Sears 2002). No blue whales were observed during the Cetacean and Turtle Assessment Program surveys of the mid- and North Atlantic areas of the outer continental shelf (Cetacean and Turtle Assessment Program 1982). Calving for the species occurs in low latitude waters outside of the area where the sectors would operate. Blue whales feed on euphausiids (krill) that are too small to be captured in fishing gear. There were no observed fishery-related mortalities or serious injuries to blue whales between 1996 and 2000 (Waring et al. 2002). The species is unlikely to occur in areas where the sectors would operate, and sector operations would not affect the availability of blue whale prey or areas where calving and nursing of young occurs. Therefore, the Proposed Action would not be likely to adversely affect blue whales.

Unlike blue whales, sperm whales do regularly occur in waters of the U.S. EEZ. However, the distribution of the sperm whales in the U.S. EEZ occurs on the continental shelf edge, over the continental slope, and into mid-ocean regions (Waring et al. 2007). Sperm whale distribution is typically concentrated east-northeast of Cape Hatteras in winter and shifts northward in spring when whales are found throughout the MA Bight (Waring et al. 2006). Distribution extends further northward to areas north of GB and the Northeast Channel region in summer and then south of New England in fall, back to the MA Bight (Waring et al. 1999). In contrast, the sectors would operate in continental shelf waters. The average depth over which sperm whale sightings occurred during the Cetacean and Turtle Assessment Program surveys was 5,879 ft (1,792 m) (Cetacean and Turtle Assessment Program 1982). Female sperm whales and young males almost always inhabit open ocean, deep water habitat with bottom depths greater than 3,280 ft (1,000 m) and at latitudes less than 40° N (Whitehead 2002). Sperm whales feed on large squid and fish that inhabit the deeper ocean regions (Perrin et al. 2002). There were no observed fishery-related mortalities or serious injuries to sperm whales between 2001 and 2005 (Waring et al. 2007). Sperm whales are unlikely to occur in water depths where the sectors would operate, sector operations would not affect the availability of sperm whale prey or areas where calving and nursing of young occurs. Therefore, the Proposed Action would not be likely to adversely affect sperm whales.

Although marine turtles and large whales could be potentially affected through interactions with fishing gear, NMFS has determined that the continued authorization of the multispecies fishery, and therefore the FY 2011 sectors, would not have any adverse effects on the availability of prey for these species. Sea turtles feed on a variety of plants and animals, depending on the species. However, none of the turtle species are known to feed upon spiny dogfish. Right whales and sei whales feed on copepods (Horwood 2002, Kenney 2002). The multispecies fishery will not affect the availability of copepods for foraging right and sei whales because copepods are very small organisms that will pass through multispecies fishing gear rather than being captured in it. Humpback whales and fin whales also feed on krill as well as small schooling fish such as sand lance, herring and mackerel (Aguilar 2002, Clapham 2002). Multispecies fishing gear operates on or very near the bottom. Fish species caught in multispecies gear are species that live in benthic habitat (on or very near the bottom) such as flounders. As a result, this gear does not typically catch schooling fish such as herring and mackerel that occur within the water column. Therefore, the continued authorization of the spiny dogfish fishery or the approval of the FY 2012 Spiny Dogfish FMP specifications will not affect the availability of prey for foraging humpback or fin whales.

6.3.3 Interactions Between Gear and Protected Resources

NMFS categorizes commercial fisheries based on a two-tiered, stock-specific fishery classification system that addresses both the total impact of all fisheries on each marine mammal stock as well as the impact of individual fisheries on each marine mammal stock. NMFS bases the system on the numbers of animals per year that incur incidental mortality or serious injury due to commercial fishing operations relative to a marine mammal stock's Potential Biological Removal (PBR) level.[6] Tier 1 takes into account the cumulative mortality and serious injury to marine mammals caused by commercial fisheries. Tier 2 considers marine mammal mortality and serious injury caused by the individual fisheries. This EA uses Tier 2 classifications to indicate how each type of gear proposed for use in the Proposed Action may affect marine mammals (NMFS 2009b). Box 6.3.3.1 identifies the classifications used in the final List of Fisheries (for FY 2010 (75 FR 68468; November 8, 2010; NMFS 2010b), which are broken down into Tier 2 Categories I, II, and III. A proposed List of Fisheries for FY 2012 was published on June 28, 2011 (76 FR 37716), but the List of Fisheries for FY 2012 has not yet been adopted and is not discussed further in this document.

[6] PBR is the maximum number of animals, not including natural mortalities, which may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population.

Box 6.3.3.1 Descriptions of the Tier 2 Fishery Classification Categories

Category	Category Description
Category I	A commercial fishery that has frequent incidental mortality and serious injury of marine mammals. This classification indicates that a commercial fishery is, by itself, responsible for the annual removal of 50 percent or more of any stock's PBR level.
Category II	A commercial fishery that has occasional incidental mortality and serious injury of marine mammals. This classification indicates that a commercial fishery is one that, collectively with other fisheries, is responsible for the annual removal of more than 10 percent of any marine mammal stock's PBR level and that is by itself responsible for the annual removal of between 1 percent and 50 percent, exclusive of any stock's PBR.
Category III	A commercial fishery that has a remote likelihood of, or no known incidental mortality and serious injury of marine mammals. This classification indicates that a commercial fishery is one that collectively with other fisheries is responsible for the annual removal of: a. Less than 50 percent of any marine mammal stock's PBR level, or b. More than 1 percent of any marine mammal stock's PBR level, yet that fishery by itself is responsible for the annual removal of 1 percent or less of that stock's PBR level. In the absence of reliable information indicating the frequency of incidental mortality and serious injury of marine mammals by a commercial fishery, the Assistant Administrator would determine whether the incidental serious injury or mortality is "remote" by evaluating other factors such as fishing techniques, gear used, methods used to deter marine mammals, target species, seasons and areas fished, qualitative data from logbooks or fisher reports, stranding data, and the species and distribution of marine mammals in the area or at the discretion of the Assistant Administrator.

Interactions between gear and a given species occur when fishing gear overlaps both spatially and trophically with the species' niche. Spatial interactions are more "passive" and involve inadvertent interactions with fishing gear when the fishermen deploy gear in areas used by protected resources. Trophic interactions are more "active" and occur when protected species attempt to consume prey caught in fishing gear and become entangled in the process. Spatial and trophic interactions can occur with various types of fishing gear used by the multispecies fishery through the year. Many large and small cetaceans and sea turtles are more prevalent within the operations area during the spring and summer. However they are also relatively abundant during the fall and would have a higher potential for interaction with sector activities that occur during these seasons. Although harbor seals may be more likely to occur in the operations area between fall and spring, harbor and gray seals are year-round residents. Therefore, interactions could occur year-round. The uncommon occurrences of hooded and harp seals in the operations area are more likely to occur during the winter and spring, allowing for an increased potential for interactions during these seasons.

Although interactions between protected species and gear deployed by the Northeast multispecies fishery would vary, interactions generally include:

- Becoming caught on hooks (bottom longlines)
- Entanglement in mesh (gillnets and trawls)
- Entanglement in the float line (gillnets and trawls)
- Entanglement in the groundline (gillnets, trawls, and bottom longlines)
- Entanglement in anchor lines (gillnets and bottom longlines), or
- Entanglement in the vertical lines that connect gear to the surface and surface systems (gillnets, traps/pots, and bottom longlines).

NMFS assumes the potential for entanglements to occur is higher in areas where more gear is set and in areas with higher concentrations of protected species.

Table 9 lists the marine mammals known to have had interactions with gear used by the Northeast multispecies fishery. This gear includes sink gillnets, traps/pots, bottom trawls, and bottom longlines within the Northeast multispecies region, as excerpted from the List of Fisheries for FY 2013 (also see Waring et al. 2009). Sink gillnets have the greatest potential for interaction with protected resources, followed by bottom trawls. There are no observed reports of interactions between longline gear and marine mammals in FY 2009 through FY 2011. However, interactions between the pelagic longline fishery and both pilot whales and Risso's dolphins led to the development of the Pelagic Longline Take Reduction Plan.

Table 9. Marine Mammals Impacts Based on Spiny Dogfish Gear (Based on 2013 List of Fisheries)

Fishery (Action Area)	Gears	LOF	Potential for Interactions
See section 6.4.2 for a description of the areas fished the managed resources	Mid-Atlantic Gillnet	Cat. I	bottlenose, common, and white-sided dolphins; harbor porpoise; gray, harbor and harp seals; humpback, short- and long-finned pilot, and minke whales
	Northeast Sink Gillnet	Cat. I	Bottlenose, common, Risso's, and white-sided dolphins; harbor porpoise; fin, humpback, north Atlantic right, and Minke whales; gray, harbor, hooded, and harp seals
	Mid-Atlantic bottom trawl fishery	Cat. II	bottlenose, common, and white-sided dolphins; short- and long-finned pilot whales
	Northeast / Mid-Atlantic bottom longline/hook and line	Cat III	No documented interactions in the most recent 5 years of data

Marine mammals are taken in gillnets, trawls, and trap/pot gear used in the Northeast multispecies area. Documented protected species interactions in Northeast sink gillnet fisheries include harbor porpoise, white-sided dolphin, harbor seal, gray seal, harp seal, hooded seal, long-finned pilot whale, offshore bottlenose dolphin, Risso's dolphin, and common dolphin. Not mentioned here are possible interactions with sea turtles and sea birds. Multispecies fishing vessels would be required to adhere to measures in the Atlantic Large Whale Take Reduction Plan (ALWTRP) to minimize potential impacts to certain cetaceans. ALWTRP was developed to address entanglement risk to right, humpback, and fin whales, and to acknowledge benefits to minke whales in specific Category I or II commercial fishing efforts that utilize traps/pots and gillnets. The ALWTRP calls for the use of gear markings, area restrictions, weak links, and sinking groundline. Fishing vessels would be required to comply with the ALWTRP in all areas where gillnets were used. Fishing vessels would also need to comply with the Bottlenose Dolphin Take Reduction Plan and Harbor Porpoise Take Reduction Plan (HPTRP) within the Northeast multispecies area. The Bottlenose Dolphin Take Reduction Plan restricts night time use of gillnets in the MA gillnet region. The HPTRP aims to reduce interactions between the harbor porpoise and gillnets in the Gulf of Maine. The HPTRP implements seasonal area closures and the seasonal use of pingers (acoustic devices that emit a sound) to deter harbor porpoises from approaching the nets.

Data from sector trips in FY 2010 and FY 2009 indicate no overall significant increase in take of protected resources or sea turtles. There may be a decrease in annual take in sink gillnet gear, and the data suggest an overall decrease in the winter take, and in the fall for turtles. However, this decrease in take corresponds well to the decrease in ACL. Within individual stat areas there does appear to be some trends in take of protected resources (includes all species).

Sea turtles have been caught and injured or killed in multiple types of fishing gear, including gillnets, trawls, and hook and line gear. However, impact due to inadvertent interaction with trawl gear is almost twice as likely to occur when compared with other gear types (NMFS 2009c). Interaction with trawl gear is more detrimental to sea turtles as they can be caught within the trawl itself and will drown after extended periods underwater. A study conducted in the MA region showed that bottom trawling accounts for an average annual take of 616 loggerhead sea turtles, although Kemp's ridleys and leatherbacks were also caught during the study period (Murray 2006). Sea turtles generally occur in more temperate waters than those in the Northeast multispecies area. Gillnets are considered more detrimental to marine mammals such as pilot whales, dolphins, porpoises, and seals, as well as large marine whales; however, protection for marine mammals would be provided through various Take Reduction Plans outlined above.

Atlantic sturgeon are known to be captured in sink gillnet, drift gillnet, and otter trawl gear (Stein et al. 2004a, ASMFC TC 2007). Of these gear types, sink gillnet gear poses the greatest known risk of mortality for bycaught sturgeon (ASMFC TC 2007). Sturgeon deaths were rarely reported in the otter trawl observer dataset (ASMFC TC 2007). However, the level of mortality after release from the gear is unknown (Stein et al. 2004a). In a review of the Northeast Fishery Observer Program (NEFOP) database for the years 2001-2006, observed bycatch of Atlantic sturgeon was used to calculate bycatch rates that were then applied to commercial fishing effort to estimate overall bycatch of Atlantic sturgeon in commercial fisheries. This review indicated sturgeon bycatch occurred in statistical areas abutting the coast from Massachusetts (statistical area 514) to North Carolina (statistical area 635) (ASMFC TC 2007). Based on the available data, participants in an ASMFC bycatch workshop concluded that sturgeon encounters tended to

occur in waters less than 50 m throughout the year, although seasonal patterns exist (ASMFC TC 2007). The ASMFC analysis determined that an average of 650 Atlantic sturgeon mortalities occurred per year (during the 2001 to 2006 timeframe) in sink gillnet fisheries. Stein et al. (2004a), based on a review of the NMFS Observer Database from 1989-2000, found clinal variation in the bycatch rate of sturgeon in sink gillnet gear with lowest rates occurring off of Maine and highest rates off of North Carolina for all months of the year.

The NEFSC prepared an estimate of the number of encounters of Atlantic sturgeon in fisheries authorized by Northeast FMPs. The analysis estimates that from 2006 through 2010, there were averages of 1,239 and 1,342 encounters per year in observed gillnet and trawl fisheries, respectively, with an average of 2,581 encounters combined annually. Mortality rates in gillnet gear were approximately 20%. Mortality rates in otter trawl gear observed are generally lower, at approximately 5%. The highest incidence of sturgeon bycatch in sink gillnets is associated with depths of <40 meters, larger mesh sizes, and the months April-May. Sturgeon bycatch in ocean fisheries is actually documented in all four seasons with higher numbers of interactions in November and December in addition to April and May. Mortality is also correlated to higher water temperatures, the use of tie-downs, and increased soak times (>24 hours). Most observed sturgeon deaths occur in sink gillnet fisheries. For otter trawl fisheries, Atlantic sturgeon bycatch incidence is highest in depths <30 meters and in the month of June.

6.4 Human Communities

A detailed description of historical fisheries for spiny dogfish is presented in Section 2.3 of the FMP. The information presented in this section is intended to briefly characterize recent fisheries trends.

6.4.2 Commercial Vessel and Dealer Activity

According to unpublished NMFS permit file data, 2,743 vessels were issued federal spiny dogfish permits in 2011, while 326 of these vessels contributed to overall landings. The distribution of permitted and active vessels by home port state is given in Table 10. Most of the active vessels were from Massachusetts (31.6%), New Jersey (14.7%), New Hampshire (11.4%), Rhode Island (9.8%), New York (8.0%), North Carolina (6.7%), and Virginia (5.8%). The remaining 39 vessels from all other states comprised 12.0% of the total.

Table 10. Federally permitted dogfish vessel activity by home port state in FY2011. Active vessels are defined as vessels identified in the dealer reports as having landed spiny dogfish in FY2011.

State	Permitted Vessels	Pct of Total	State	Active Vessels	Pct of Total
MA	1,012	36.89%	MA	103	31.60%
NJ	404	14.73%	NJ	48	14.72%
RI	176	6.42%	NH	37	11.35%
NY	283	10.32%	RI	32	9.82%
NC	157	5.72%	NY	26	7.98%
VA	126	4.59%	NC	22	6.75%
NH	131	4.78%	VA	19	5.83%
ME	303	11.05%	ME	16	4.91%
MD	41	1.49%	MD	13	3.99%
CT	51	1.86%	CT	8	2.45%
DE	26	0.95%	Other	2	0.61%
PA	17	0.62%	**Total**	**326**	**100.00%**
FL	11	0.40%			
Other	5	0.18%			
Total	**2,743**	**100.00%**			

Source: NMFS permit data, Commercial Fisheries Database

NMFS permit data indicate that 311 dealers possessed federal spiny dogfish dealer permits in 2010 while dealer reports indicate 76 of those dealers actually bought spiny dogfish. The distribution of permitted and active dealers by state is given in Table 11. Most of the active dealers were from the states of Massachusetts (27.63%), New York (21.05%), Rhode Island (13.16%), North Carolina (13.16%), New Jersey, (9.21%), Virginia (6.58), and Maine (3.95%) with the remaining four dealers in other states comprising 5.26% of the total.

Table 11. Federally permitted spiny dogfish dealers by state in FY2011. Active dealers are defined as dealers identified in the federal dealer reports as having bought spiny dogfish in FY2011.

State	Permitted Dealers	Pct of Total	State	Active Dealers	Pct of Total
MA	85	27.33%	MA	21	27.63%
NY	68	21.86%	NY	16	21.05%
NJ	39	12.54%	RI	10	13.16%
RI	33	10.61%	NC	10	13.16%
NC	25	8.04%	NJ	7	9.21%
ME	20	6.43%	VA	5	6.58%
VA	18	5.79%	ME	3	3.95%
MD	8	2.57%	Other	4	5.26%
NH	7	2.25%	**Total**	**76**	**100.00%**
CT	3	0.96%			
PA	3	0.96%			
Other	2	0.64%			
Total	**311**	**100.00%**			

Source: NMFS permit data, Commercial Fisheries Database

Landings by State
Commercial harvest has historically been dominated by Massachusetts (Table 12). State-by-state landings since 2007 are influenced by the regional allocation of commercial quota through the ASMFC's Interstate FMP. Currently, that FMP allocates 58% of the annual quota to a northern region (Maine –Connecticut), and the remaining 42% among states from New York – North Carolina (NY 2.707%; NJ 7.644%; DE 0.896%; MD 5.920%; VA 10.795%, NC 14.036%).

In fishing year 2011, Massachusetts accounted for 43.6% of coastwide landings (Table 12). North Carolina (13.1%), Virginia (10.7%), New Hampshire (7.9%), and New Jersey (7.8%) were also important landings states. No other states contributed more than 5% of annual landings.

Table 12. Commercial landings (1,000s lb) of spiny dogfish by state from fishing years 1989 through 2011.

Year	ME	NH	MA	RI	CT	NY	NJ	DE	MD	VA	NC	Total
1989	4,962	0	5,100	47	24	13	1,434	0	714	18	0	9,903
1990	6,251	185	20,304	2,968	9	44	4,754	0	5,150	62	41	32,475
1991	2,059	0	13,523	1,901	22	74	2,382	6	3,338	165	1,463	29,049
1992	1,818	405	17,457	2,116	9	140	1,493	0	1,877	220	8,635	37,165
1993	3,408	1,639	26,189	1,554	170	100	707	0	1,893	379	8,806	45,509
1994	1,788	2,610	23,181	603	85	475	1,422	63	2,233	665	6,929	41,447
1995	1,683	2,094	28,789	414	408	815	2,581	0	7,752	1,065	9,525	50,068
1996	904	1,135	27,208	1,518	619	1,381	5,833	0	4,820	4,832	10,304	60,055
1997	437	999	21,417	682	282	312	3,831	0	2,105	3,945	5,924	40,460
1998	288	1,935	24,866	1,906	241	1,704	7,091	2	2,199	5,004	3,928	45,476
1999	28	1,233	14,824	1,237	87	2,868	6,586	0	808	1,750	3,601	32,760
2000	1	2,279	5,545	130	12	145	5	0	0	72	12	8,202
2001	0	529	3,912	395	7	62	17	0	0	178	3	5,103
2002	1	349	3,800	455	6	49	1	0	2	114	0	4,777
2003	0	175	2,006	141	2	41	0	0	5	451	520	3,341
2004	3	0	1,094	129	60	42	7	0	1	39	20	1,396
2005	31	162	1,826	173	93	44	1	0	11	66	10	2,417
2006	180	633	2,744	518	62	11	3	0	16	2,286	144	6,596
2007	99	185	2,796	523	23	21	10	0	25	2,575	167	6,424
2008	49	1,370	3,559	239	10	23	50	0	114	2,479	1,416	9,308
2009	594	1,885	3,881	940	92	192	1,342	14	169	1,490	1,708	12,307
2010	229	1,214	6,442	708	107	468	1,208	8	541	1,547	2,550	15,022
2011	349	1,646	9,069	1,265	187	407	1,628	31	1,265	2,237	2,727	20,811

Source: NMFS Commercial Fisheries Database.

Landings by Month
Under the current federal FMP, the annual commercial quota is allocated seasonally to two half-year periods. Period 1 (May 1 – Oct 31) is allocated 57.9% of the quota and Period 2 is allocated 42.1% of the quota. This allocation scheme was implemented as part of the rebuilding plan in order to match seasonal availability of the resource with the historic landings patterns by communities over the fishing year. Amendment 3 to the FMP may be implemented after the start of the 2013 fishing year and proposes to eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota would be specified through the federal FMP. The elimination of seasonal allocation is being proposed in order to

minimize conflicts with the ASMFC plan which allocates the coastwide quota by state and region, rendering moot any federal attempt to use seasons as a proxy for regional allocation. In fishing year 2011, spiny dogfish were landed in all months with peak landings occurring in June-August of Period 1 and Nov – Jan of Period 2 (Table 13).

Table 13. Spiny dogfish landings (lb) by month in FY2011.

	Month	Landings(lb)	Pct of Total
Period 1	May	668,690	3.21%
	Jun	2,289,432	11.00%
	Jul	4,842,812	23.27%
	Aug	5,101,594	24.51%
	Sep	27,861	0.13%
	Oct	153	0.00%
	Total	12,930,542	62.13%
Period 2	Nov	2,678,766	12.87%
	Dec	1,894,919	9.11%
	Jan	2,990,281	14.37%
	Feb	102,685	0.49%
	Mar	135,241	0.65%
	Apr	78,289	0.38%
	Total	7,880,181	37.87%
	Grand Total	20,810,723	100.00%

Source: NEFSC NMFS Commercial Fisheries Database, SEFSC General Canvass Data

6.4.2 Commercial Fishery Value

Unpublished NMFS dealer reports indicate that the total ex-vessel value of commercially landed spiny dogfish in calendar year 2011 was about $4.646 million, and in fishing year 2011 was about $4.456 million. The approximate price/lb of spiny dogfish was $0.22 and $0.21 in those timeframes, respectively (Table 14).

Table 14. Ex-vessel value and price per pound of commercially landed spiny dogfish, Maine - North Carolina combined, 2000-2011.

Calendar Year	Value ($1,000)	Price ($/lb)	Fishing Year	Value ($1,000)	Price ($/lb)
2000	4,293	0.21	2000	1,956	0.24
2001	1,100	0.22	2001	1,097	0.22
2002	937	0.20	2002	939	0.20
2003	299	0.13	2003	353	0.11
2004	276	0.13	2004	233	0.17
2005	467	0.20	2005	479	0.20
2006	1,209	0.23	2006	1,469	0.22
2007	1,390	0.21	2007	1,342	0.21
2008	2,242	0.25	2008	2,227	0.24
2009	2,582	0.22	2009	2,628	0.21
2010	2,588	0.20	2010	3,064	0.20
2011	4,646	0.22	2011	4,456	0.21

Source: NMFS Commercial Fisheries Database

In FY2011, 174 vessels with federal dogfish permits were reported in the dealer data to have had dogfish revenues greater than 5% of total revenue (dogfish revenue range $100 to 51,029, average = $14,454; dogfish rev / total rev range 5.0% to 100%, average = 41.0%).

6.5.3 Port and Community Description

U.S. fishing communities directly involved in the harvest or processing of dogfish are found in coastal states from Maine through North Carolina. This EA is most concerned with the top dogfish ports which are identified in Table 15. Spiny dogfish landings were reported from a total of 68 unique ports in the dealer data. Landings by port for FY2011 are given in Table 15. Gloucester, MA accounted for the largest share of total FY2011 landings (16.37%), followed by Chatham, MA (16.27%), Scituate, MA (6.00%), New Bedford, MA (5.99%), and VA Beach/Lynnhaven, VA (5.50%). No other port comprised greater than 5% of total landings.

Spiny dogfish revenue was calculated as a % of total port revenue and was both greater than $100,000 and greater than 1% of port revenue in Virginia Beach/Lynnhaven, VA (9.7%), Rye, NH (6.2%), Scituate, MA (7.6%), and Seabrook, NH (5.4%). Port descriptions for these ports from the NEFSC's "Community Profiles for the Northeast US Fisheries" are provided in Appendix 1. A complete set of profiles is online: http://www.nefsc.noaa.gov/read/socialsci/communityProfiles.html

Table 15. Commercial landings (lb) and value of spiny dogfish by port for fishing year 2011.

Port	Landings (lb)	Pct of Total	Value ($)	Pct of Total	Total Port Value ($)	Dogfish Value / Port Value
GLOUCESTER, MASSACHUSETTS	2,864,652	16.37%	570,141	14.62%	45,509,416	1.3%
CHATHAM, MASSACHUSETTS	2,846,747	16.27%	546,656	14.02%	14,218,775	3.8%
SCITUATE, MASSACHUSETTS	1,049,300	6.00%	231,160	5.93%	3,060,331	7.6%
NEW BEDFORD, MASSACHUSETTS	1,048,340	5.99%	302,517	7.76%	289,648,827	0.1%
VIRGINIA BEACH/LYNNHAVEN, VIRGINIA	962,000	5.50%	221,255	5.67%	2,286,877	9.7%
OCEAN CITY, MARYLAND	806,402	4.61%	189,602	4.86%	5,032,587	3.8%
BARNEGAT LIGHT/LONG BEACH, NEW JERSEY	779,662	4.46%	181,377	4.65%	23,688,379	0.8%
POINT JUDITH, RHODE ISLAND	700,592	4.00%	123,671	3.17%	30,697,930	0.4%
POINT PLEASANT, NEW JERSEY	636,570	3.64%	144,866	3.71%	19,392,086	0.7%
LITTLE COMPTON, RHODE ISLAND	556,233	3.18%	125,692	3.22%	3,369,617	3.7%
PORTSMOUTH, NEW HAMPSHIRE	537,737	3.07%	124,327	3.19%	4,737,034	2.6%
RYE, NEW HAMPSHIRE	536,330	3.07%	144,805	3.71%	2,347,292	6.2%
SEABROOK, NEW HAMPSHIRE	451,521	2.58%	121,179	3.11%	2,234,730	5.4%
All Others (55)	3,719,465	21.26%	873,160	22.39%	301,429,058	0.29%
Total	**17,495,551**	**100.00%**	**3,900,408**	**100.00%**	**747,652,939**	**0.52%**

Source: Unpublished NMFS dealer reports

7.0 ENVIRONMENTAL CONSEQUENCES – ANALYSIS OF DIRECT AND INDIRECT IMPACTS

This section presents an analysis of the impacts of the proposed actions (Section 5.0) on the VECs (Section 6.0). Table 16, below, is provided to re-iterate the management measures that correspond to each of the alternatives.

Table 16. Values (M lb of spiny dogfish) associated with the management alternatives.

Year	Alternatives	ACL	Commercial ACT	Commercial Quota	Trip Limit
2013	**Alternative 1** (Preferred, MC-recommended Quota and Increased Trip Limit)	54.295	52.598	40.842	4,000
	Alternative 2 (Non-Preferred, MC-recommended Quota, Status Quo Trip Limit)	54.295	52.598	40.842	3,000
	Alternative 3 (Non-Preferred, Max Quota, Increased Trip Limit)	54.295	54.295	42.539	4,000
	Alternative 4 (Non-Preferred, Status Quo Quota and Trip Limit)	44.737	44.737	35.694	3,000
2014	**Alternative 1** (Preferred, MC-recommended Quota and Trip Limit)	55.277	53.540	41.784	4,000
	Alternative 2 (Non-Preferred, MC-recommended Quota, Status Quo Trip Limit)	55.277	53.540	41.784	3,000
	Alternative 3 (Non-Preferred, Max Quota, Increased Trip Limit)	55.2777	55.277	43.520	4,000
	Alternative 4 (Non-Preferred, Status Quo Quota and Trip Limit)	44.737	44.737	35.694	3,000
2015	**Alternative 1** (Preferred, MC-recommended Quota and Increased Trip Limit)	55.063	53.355	41.578	4,000
	Alternative 2 (Non-Preferred, MC-recommended Quota, Status Quo Trip Limit)	55.063	53.355	41.578	3,000
	Alternative 3 (Non-Preferred, Max Quota, Increased Trip Limit)	55.063	55.063	43.307	4,000
	Alternative 4 (Non-Preferred, Status Quo Quota and Trip Limit)	44.737	44.737	35.694	3,000

In comparing the alternatives, the proposed quotas and trip limits under each alternative are compared to the 2012 landings limits as well as the 2011 realized landings. The relative increase or decrease under the alternatives is then expressed as a percentage (Table 17).

Table 17. Percent difference in 2013 - 2015 limits for each alternative relative to 2012 limits and 2011 landings.

2013 Alternatives		Alternative 1 Preferred: Max Quota and Trip Limit	Alternative 2 Max Quota and S.Q. Trip Limit	Alternative 3 S.Q. Quota and Max Trip Limit	Alternative 4 S.Q. Quota and S.Q. Trip Limit
2012 limits	Quota	14.42%	14.42%	19.18%	0.00%
	Trip Limit	33.33%	0.00%	33.33%	0.00%
2011 landings	Commercial Landings	89.18%	89.18%	97.04%	65.33%

2014 Alternatives		Alternative 1	Alternative 2	Alternative 3	Alternative 4
2012 limits	Quota	17.06%	17.06%	21.93%	0.00%
	Trip Limit	33.33%	0.00%	33.33%	0.00%
2011 landings	Commercial Landings	93.54%	93.54%	101.58%	65.33%

2015 Alternatives		Alternative 1	Alternative 2	Alternative 3	Alternative 4
2012 limits	Quota	16.49%	16.49%	21.33%	0.00%
	Trip Limit	33.33%	0.00%	33.33%	0.00%
2011 landings	Commercial Landings	92.59%	92.59%	100.60%	65.33%

A hypothetical consideration of the interaction between resource availability and harvest limits and how these factors influence fishing effort is summarized in Table 18. Changes in landings limits can produce changes in fishing effort and interactions between fishing gear and habitat, non-target species and protected species is related to these changes in fishing effort. The direction (increase or decrease) and magnitude (how much) of the change is also dependent on other factors such as the availability of fish to the fleet. Availability may be a function of both

spatial distribution and abundance. While the magnitude of any change in effort is difficult to quantify, general expectations exist about the directionality of changes in effort in response to changes in landings limits and availability (Table 18).

Table 18. Expected changes in fishing effort that result from changes to landings limits and fish availability.

Change in quota	Fish abundance/availability		
	Decrease in availability	**No change in availability**	**Increase in availability**
Decrease in quota	Fishing effort (number of trips) may decrease as a result of a decrease in quota; however, because of the decrease in availability (trips catching fewer fish), fishermen may need to take additional trips to offset the lower cpue; managers may reduce trip limits or adjust regulations that extend the fishing season and affect effort; therefore fishing effort may be the same or increase.	Fishing effort may decrease as a result of a decrease in quota under similar availability (trips catching similar amounts of fish); however, managers may reduce trip limits or adjust regulations that extend the fishing season and affect effort; therefore fishing effort may be the same or decrease.	Fishing effort may decrease as a result of a decrease in quota; likewise under increased availability (trips catching more fish), effort may decrease; however, managers may reduce trip limits or adjust regulations that extend the fishing season and affect effort; therefore fishing effort may be the same or decrease.
No change in quota	Fishing effort may remain the same as the quota has not changed; however, because of the decrease in availability (trips catching fewer fish), fishermen may need to take more trips to catch the same amount of fish; therefore fishing effort may be the same or increase.	Fishing effort may remain the same given the quota has not changed and availability is expected to be similar.	Fishing effort may remain the same as the quota has not changed; however, because of the increase in availability (trips catching more fish), fishermen may be able to catch the same amount of fish with fewer trips thus decreasing effort; therefore fishing effort may be the same or decrease.
Increase in quota	Fishing effort may increase in response to the increase in quota; because of the decrease in availability (trips catching fewer fish), fishermen may need to take more trips to catch the same amount of fish; however, managers may increase trip limits or adjust regulations in response to the higher quota allowing fewer trips to catch more fish; therefore, fishing effort may be the same or increase.	Fishing effort may increase in response to the increase in quota under similar fish availability due to fishermen taking more trips to catch quota; however, managers may increase trip limits or adjust regulations in response to the higher quota allowing fewer trips to catch more fish; therefore, fishing effort may be the same or increase.	Fishing effort may increase in response to the increase in quota; because of the increase in availability (trips catching more fish), fishermen may be able to catch the same amount of fish with fewer trips thus decreasing effort; managers may increase trip limits or adjust regulations, but this may be offset by higher cpue; therefore, fishing effort may be the same or decrease, depending on the combination of factors.

For the target species, the effects of changes in effort are only important with regard to the removal of individuals from the population. Thus, consideration of effort is primarily focused on VECs other than the target or managed resource. A decrease in effort may result in positive impacts (+) as a result of fewer encounter rates with non-targets or ESA listed and MMPA protected species and fewer habitat gear impacts, and an increase in effort may result in a

negative impact (-). Similar effort results in neutral impacts (0). The commercial fishery may avoid non-target species, particularly those that cannot be landed because commercial fishermen do not find it lucrative to spend additional fuel costs and resources sorting/processing species that the commercial vessels do not have permits to land or a market to sell.

For all the alternatives, the biomass of the spiny dogfish resource is projected to remain fairly stable, above Bmsy in 2013-2015 (NEFSC 2012). On a shorter timescale, availability to the fishery may not be directly predictable by biomass. For example, in 2012, although biomass was at its highest level since the all-time peak in the early 1990s, landings at the start of the fishing year (May through June) were very low. Many fishermen attributed this to fish being too far offshore to justify a directed trip (Figure 4 top; pers. comm. Tobey Curtis). Landings later rebounded as the availability of the resource changed (Figure 4 bottom). In projecting total landings over the course of an entire fishing year or multi-year timeframe, one would expect stable biomass to correspond fairly well to stable availability. While the number of directed spiny dogfish trips could increase due to the extended season (i.e., compared to no action), effective fishing effort (e.g., soak time per trip, days absent, etc.) may not change under stable availability of dogfish (Table 18). Additional important factors that would constrain effort include a substantial non-directed component of the fishery and the restrictions on harvest/possession in state waters.

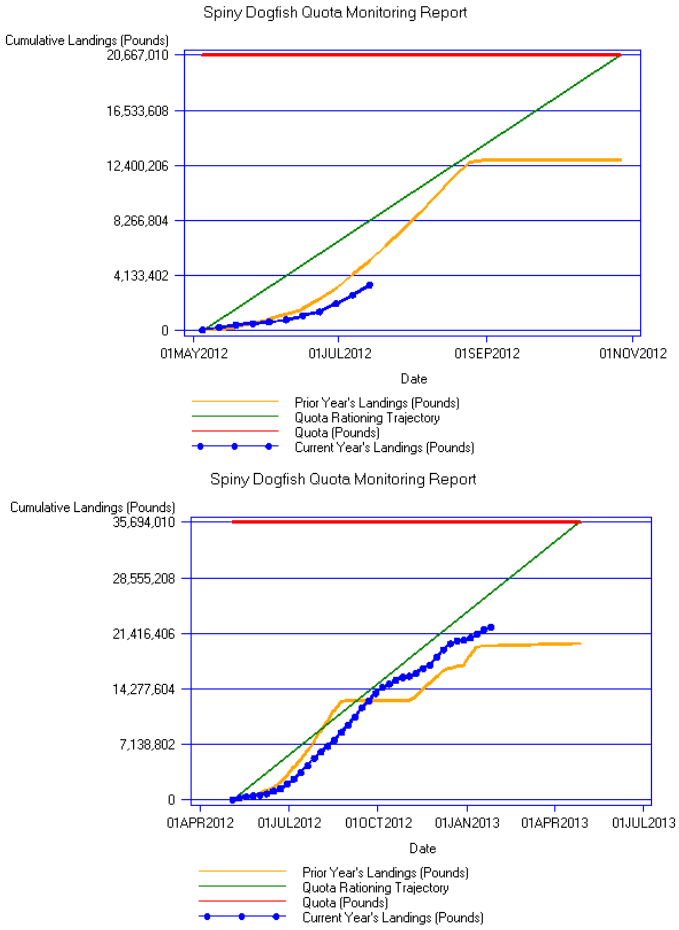

Figure 5. Cumulative spiny dogfish landings in fishing year 2012 (blue line). Landings lagged at the start of the fishing year (top) despite an 86% increase in the quota, making it look like the annual quota would not be landed. As the fishing year progressed (bottom), landings picked up, approximating the landings rate necessary to land the entire quota (green line).

With regard to the relationship between trip limits and effort, a 33% increase in allowable trip-level landings under Alternatives 1 and 3 may or may not increase trip level effort significantly. Since, under current effort levels, catches above the current trip limit are fairly common, then a measure of effort would be less than the proportional increase in the trip limit (e.g., less than 33%). Additionally, effort associated with incidental landings of spiny dogfish, where maxing out the trip limit is not attempted would be less sensitive to the change in the trip limit. Considering total effort over the course of the season, a larger trip limit would be associated with greater effort per day, but would also be more likely to result in a shorter season, relative to a smaller trip limit. In fact, if average daily effort is assumed to be proportional to the trip limit, the fishing season will be longest for Alternative 2 followed by Alternative 4, then Alternative 4 and finally Alternative 1.

7.1. BIOLOGICAL IMPACTS

Biological impacts include the effects of the actions on the managed resource and non-target species, but not including protected species which are addressed in Section 7.3. The overall catch limits under Alternatives 1 and 2 are expressly intended to prevent overfishing which would result in a fishing mortality rate for spiny dogfish more likely to result in stock growth than stock reduction. This means corresponding positive impacts on the spiny dogfish population are associated with all these alternatives despite the increase in quota. It follows, then that lower catches under Alternative 4 would correspond to greater positive impacts given that it represents the smallest quota, while Alternative 3, which would maximize the quota by setting ACT = ACL, would be the least likely to benefit the stock and may negatively affect stock biomass by accelerating a decline below Bmsy.

A higher trip limit differentiates Alternatives 1 and 3 (4,000 lb) from Alternatives2 and 4 (3,000 lb), and as discussed, the quota would likely be caught most quickly under Alternative 1. Given the current rate of landings (Figure 4), it is possible that under the increased trip limit, the entire quota will not be caught. Additionally, since the total amount of landed spiny dogfish would be controlled by the quotas, this difference between these trip limit alternatives is not relevant to impacts on the managed spiny dogfish resource.

With regard to non-target species, impacts are related to changes in effort which has been thoroughly explained. Impacts associated with Alternative 3 compared to status quo are the most likely to be negative due to it having the largest quota. However, as stated above, additional factors will likely constrain effort such that any increases in negative impacts to non-target species are minor. Impacts on non-target species would be least negative for Alternative 4 which has the lowest quota and trip limit combination. With identical quotas, Alternatives 1 and 2 are likely indistinguishable over the course of a fishing year, and fall in between Alternatives 3 and 4 in terms of potential for negative impacts to non-target species. None of the alternatives are associated with significantly negative impacts on non-target species.

7.1.1 RSA

Under Alternative 1, there would not be set-asides for 2014 and 2015, and the RSA quota amounts would not be deducted from the commercial quota. Because all landings count against the overall quota regardless of whether or not an RSA is implemented, the biological impacts would not change if this alternative were adopted. Under this alternative, there would also be no

indirect positive effects from broadening the scientific base upon which management decisions are made.

Under Alternative 2, RSA quota would be awarded to selected projects and deducted from the commercial quotas in 2014 and 2015. Because the RSA quota is a part of landings limits, no additional mortality would occur if this alternative were adopted in either year. In addition, this alternative is expected to indirectly benefit the resource as selected projects will likely provide information that will improve resource science and management.

Vessels harvesting research quota in support of approved research projects would be issued an exempted fishery permit (EFP) authorizing them to exceed Federal possession limits and to fish during Federal quota closures. These exemptions are necessary to allow project investigators to recover research expenses as well as adequately compensate fishing industry participants harvesting research quota. Vessels harvesting research quota would operate within all other regulations, unless otherwise exempted through a separate EFP. Because commercial quota closures may or may not occur during a given fishing year, exemption from these closures will have no additional environmental impact. Exemption from possession limits could result in compensation fishing where vessels alter their normal fishing behavior; such as extending tow duration or fishing longer than they otherwise would for example. However, this slight alteration in fishing behavior is expected to have negligible impacts beyond that of the vessels operating within the full suite of fishery regulations.

Research activities would not result in additional fishing effort. Research vessels would require an EFP as needed. If not exempted, vessels must follow all other regulations for non-target species. Exemption from spiny dogfish closures would also be needed to ensure the survey is not disrupted if federal waters are closed to possession during the study period.

7.2 HABITAT IMPACTS

The gear types more commonly associated with directed fishing for spiny dogfish are gillnets and hook-and-line and are not generally associated with negative gear impacts. This combination of factors (low impact gear and increased resource availability) makes it likely that all of the alternatives will result in neutral to low negative impacts on habitat and EFH. Alternatives 1 and 2 include a smaller increase in commercial quota (14 – 17%) than Alternative 3 and are expected to result in impacts on habitat that range from neutral to very low negative. Alternative 3 (status quo) has the greatest potential for negative impacts but is expected to result in low negative impacts, while Alternative 4 which would maintain status quo impacts would result in neutral impacts.

As to the impacts of trip limits, which differentiates Alternative 1 and 3 (4,000 lb) from Alternative 2 and 4 (3,000 lb), although the likelihood for increased directed fishing is greatest under the larger Alternative 1a trip limits, the greater abundance of the resource makes it unlikely that directed effort will increase substantially. The difference in total impacts between Alternatives 1 and 2 are not expected to be differentiable. Therefore the impacts on habitat are expected to range from low negative (Alternatives 1, 2, and 3) to null (Alternative 4).

7.2.1 RSA

Because all spiny dogfish landings count against the overall quota regardless of whether or not an RSA is implemented, neither alternative is expected to change the level of fishing effort. In addition, the manner in which this fishery is operates is not expected to change or be redistributed by gear under either alternative.

Although under Alternative 2 exemptions would be issued that would exempt vessels from possession limits and quota closures, there would be no additional impact on habitat because the RSA quota is part of, and not in addition to the overall commercial landings limit. Therefore, each of these alternatives will likely result in minimal adverse effects of fishing on EFH to the extent practicable, pursuant to section 305 (a)(7) of the MSA.

7.3 ENDANGERED SPECIES AND MMPA PROTECTED RESOURCE IMPACTS

Section 6.2 describes the ESA listed and MMPA protected species VEC and other related impact considerations. All fishing gears are required to meet gear restrictions as required under the Atlantic Large Whale Take Reduction Plan (ALWTRP) and Harbor Porpoise Take Reduction Plan (HPTRP). These plans contain measures designed to reduce interactions/impacts associated with fishing gears. Interaction between endangered / protected resources and spiny dogfish fishing gear is also affected by species' abundances.

The degree to which encounters with endangered and other protected species would change under any of the alternatives is related to how fishing effort would change if a given alternative is implemented. If the quota is increased as under Alternatives 1, 2, and 3, compared to Alternative 4, then it is possible that there could be some increase in the extent of *directed* dogfish fishing in the EEZ. If this occurs, then encounters with protected resources could be attributable to activity by the dogfish fishery. Directed fishing appears to be related to the type of gear used with much greater likelihood of directed effort with bottom longlines, less likelihood with bottom otter trawls, and gillnets somewhere in between. Additionally, because the abundance of dogfish has increased, larger catches are not necessarily associated with an increase in fishing effort. That a given trip would be made for the sole purpose of harvesting dogfish is also less likely the farther from shore that trip occurs. Nevertheless, in comparison to the Alternative 4, it is expected that directed dogfish fishing in the EEZ is more likely to increase than decrease under Alternatives 1 and 2, and to the greatest degree under Alternative 3.

As to the impacts of trip limits, which differentiates Alternative 1 and 3 (4,000 lb) from Alternatives 2 and 4 (3,000 lb), although the likelihood for increased directed fishing is greatest under the larger Alternative 1 and 3 trip limits, the greater abundance of the resource makes it unlikely that directed effort will increase substantially. The difference in total impacts between Alternatives 1, 2 and 3 are not expected to be differentiable. Therefore the impacts on protected resources are expected to range from low negative (Alternatives 1 - 3) to null (Alternative 4).

The protected species that would be encountered from directed dogfish fishing would likely be similar to those which occurred in the historic North Carolina gill net fishery. As such, one might expect that encounters with coastal bottlenose dolphins, sea turtles, and harbor porpoises may occur (see Section 6.3). However, since the implementation of the Bottlenose Dolphin Take Reduction Plan and Harbor Porpoise Take Reduction Plan, more stringent rules are in place than existed when those previously mentioned encounters took place. Specifically, nets must be

attended and no night time sets are allowed. Similarly, the Atlantic Large Whale Take Reduction Plan should reduce potential encounters with whales. Nevertheless, it is possible that protected resource encounters associated with spiny dogfish harvest may increase under Alternatives 1 - 3 as compared to Alternative 3, and to the greatest degree under Alternative 3.

It is likely with this potential for increased fishing, gear interactions with protected resources would also increase, resulting in low negative impacts to this VEC. There is the potential for continued low negative impacts to protected resources under Alternative 4. However, because the abundance of dogfish has increased greatly, effort is unlikely to increase significantly.

7.3.1 Atlantic Sturgeon Impacts

Formal consultation on the spiny dogfish fishery was reinitiated on February 9, 2012. NMFS has determined that there will not be any irreversible or irretrievable commitment of resources under section 7(d) of the ESA during the consultation period that would have the effect of foreclosing the formulation or implementation of any reasonable and prudent alternative measures. NMFS has also determined that the continued authorization of the spiny dogfish fishery during the consultation period, including the authorization of the fishery to operate under the measures proposed in this action, is not likely to jeopardize the continued existence of ESA-listed species or result in the destructive or adverse modification of critical habitat.

On February 6, 2012, NMFS listed the Gulf of Maine distinct population segment of Atlantic sturgeon as threatened, and listed the New York Bight, Chesapeake Bay, Carolina, and South Atlantic DPSs of Atlantic sturgeon as endangered (77 FR 5880 and 75 FR 5914). This action considered whether the spiny dogfish fishery, including implementation of the proposed action, is likely to jeopardize Atlantic sturgeon DPSs, as they were proposed to be listed, and concluded that is not. While there may be interactions between Atlantic sturgeon and gear used in the spiny dogfish fishery, the number of interactions that will occur during the duration of this action is not likely to cause an appreciable reduction in survival and recovery. This is supported by updated bycatch estimates based upon NEFOP data (2006-2011).

Atlantic sturgeon are known to be captured in sink gillnet, drift gillnet, and otter trawl gear. Of these gear types, sink gillnet gear poses the greatest known risk of mortality for bycaught sturgeon. Sturgeon deaths were rarely reported in the otter trawl observer dataset. Based on observer data, discard mortality in gillnets (except monkfish gillnets) is estimated to be 20%, while mortality in otter trawls is only 5%. In an updated, preliminary analysis, the Northeast Fisheries Science Center (NEFSC) was able to use data from the NEFOP database to provide updated estimates for the 2006 to 2010 timeframe. Data were limited by observer coverage to waters outside the coastal boundary (fzone>0) and north of Cape Hatteras, NC. Sturgeon included in the data set were those identified by federal observers as Atlantic sturgeon, as well as those categorized as unknown sturgeon. At this time, data were limited to information collected by the NEFOP; limited data collected in the At-Sea Monitoring Program were not included, although preliminary views suggest the incidence of sturgeon encounters was low.

The preliminary analysis apportioned the sturgeon takes to specific gears. The analysis estimates that between 2006 and 2010, there were 2,250 to 3,862 encounters per year in gillnet and trawl fisheries (average = 3,118). Approximately 1,570 sturgeon per year were caught in sink gillnets (~364 mortalities), and 1,548 sturgeon per year were caught in otter trawls (~77 mortalities). Other gear types, including hook and line, were determined to have minimal impacts on Atlantic

sturgeon mortality. Therefore, impacts on sturgeon from the spiny dogfish fishery are restricted to the impacts associated with only gillnet and trawl trips.

As described in Section 6.1.3, in FY2011, gillnet trips accounted for 68% of spiny dogfish landings, while otter trawl trips accounted for 20% of landings. Since most trawl trips occur in Gulf of Maine, Georges Bank, or Southern New England waters, those trips typically require the use of Northeast Multispecies, Scallop, or Monkfish DAS, or participation in a Multispecies sector. Therefore, most trawl trips that land dogfish are associated with those fisheries, and effort is constrained under their respective FMPs. On such trips, spiny dogfish are mostly landed incidentally to the target groundfish/monkfish species. Since there are so few directed dogfish trawl trips, and the discard mortality of sturgeon in trawls is so low (5%), the impacts of the dogfish trawl fishery on sturgeon are expected to be minimal.

A substantial proportion of gillnet trips that land spiny dogfish are also associated with DAS or sector fisheries. Therefore, the impacts of the proposed action on Atlantic sturgeon are largely limited to directed dogfish gillnet trips that are not associated with these other fisheries (i.e. some fraction of the 68% of trips that use gillnet). Directed spiny dogfish trips may occur without the use of DAS in several exemption areas, such as the Gulf of Maine/Georges Bank Dogfish Gillnet Exemption Area (July 1 – August 31), Nantucket Shoals Dogfish Exemption Area (June 1 – October 15), Southern New England Dogfish Gillnet Exemption Area (May 1- October 31), and the Mid-Atlantic Exemption Area (year round). Descriptions of these areas and their associated requirements can be found at http://www.nero.noaa.gov/sfd/sfdsdog.html.

Under Alternatives 1, 2 and 3the spiny dogfish commercial quota would be increased by 14% (Alt 1,2) and 19% (Alt 3) compared to the current year. However, due to the characteristics of the fishery and its overlap with other fisheries, the proposed quota increase is not expected to result in a proportional increase in effort. Additionally, if the dogfish fishery remains open longer compared to status quo, dogfish that would have been discarded on those trips where they are incidentally caught (i.e., under no action) may instead be retained.

Effort on directed spiny dogfish gillnet trips (i.e., in exemption areas) may increase under the proposed action, but would likely occur at a substantially lower rate than the quota increase. The large quota increase in conjunction with the status quo (3,000-lb) or increased (4,000-lb) trip limit was intended to extend the fishing season and help prevent mid-year fishery closures. While the number of directed spiny dogfish gillnet trips could increase due to the extended season (compared to no action), the effective fishing effort (e.g., soak time per trip, days absent, etc.) may not increase due to the greater availability of dogfish (Table 18). Higher catch rates means that vessels could catch the same amount of fish in fewer trips. There is no reason to expect that any of the alternatives would lead to increased participation (i.e., more vessels) in the fishery. Under Alternatives 1 and 3 (4,000-lb trip limit), the number of trips would likely remain constant or decline, as the quota could be reached earlier in the year triggering a closure, as compared to Alternative 2 and 4 (3,000-lb trip limit). Under Alternatives 1 and 3, there may be more trips at the end of the season if closures are avoided, but these trips and net soak times would likely be shorter due to the higher CPUE of dogfish. Under the no action alternative (Alternative 4), the number of trips would likely decline as the increased dogfish catch rates combined with the status quo quota and trip limit would result in the quota being harvested earlier in the year compared to 2012. Therefore, the no action alternative may have slightly positive impacts on Atlantic sturgeon compared to the action alternatives (Alternatives, 1, 2, and 3).

Approximately 60% of spiny dogfish landings and 53% of trips are derived from just three statistical areas in the Gulf of Maine and Cape Cod regions (statistical areas 513, 514, and 521, Table 5). These trips mostly occur between May and August. Trips in this region are most likely to interact with the Gulf of Maine Atlantic sturgeon DPS, which was listed as threatened, not endangered. Therefore, any potential increases in fishing effort for spiny dogfish are likely to have less of an impact on the endangered DPSs than on the threatened DPS.

The ASMFC has approved the measures described in Alternative1 for state waters in 2013 (14% quota increase). Therefore, even if Alternative 3 is approved and implemented in Federal waters, the effective commercial quota in 2013 – 2015 will still be the quotas under Alternative 1 for each year since states will close to dogfish landings according to the allocations under that lower quota. Alternative 3 is expected to have neutral to slight negative impacts on ESA-listed species compared to no action, but the ASMFC's implementation of Alternative 1 may help mitigate potential minor negative impacts on sturgeon, if implemented.

Given this combination of factors, the Alternatives 1 and 2 are likely to have neutral to slightly negative impacts on Atlantic sturgeon compared to Alternative 4 (no action). Alternative 3 would also likely have neutral to slightly negative impacts on Atlantic sturgeon compared to the no action alternative. However, the impacts of Alternatives 1 and 2 are likely to be less than Alternative 3 due to the lower overall quota. Importantly, an increase in quota under any of the action alternatives (1 - 3) is not expected to result in substantial increases in fishing effort that would result in significant adverse effects on the Atlantic sturgeon DPSs.

Given the comparatively low contribution of the spiny dogfish fishery to Atlantic sturgeon mortality, the magnitude of interactions during the 2013 - 2015 fishing years are not likely to result in jeopardy to the species based on current assessments of each DPS (Kocik et al. 2013). These data support the conclusion from the earlier bycatch estimates that the spiny dogfish fishery may interact with Atlantic sturgeon. However, the more recent, larger population estimate derived from NEAMAP data (Kocik et al. 2013) suggests that the level of interactions with the spiny dogfish fishery is not likely to have a significant adverse impact on the overall Atlantic sturgeon population, or any of the DPS's. Since the Atlantic sturgeon DPSs have been listed as endangered and threatened under the ESA, the ESA Section 7 consultation for the spiny dogfish fishery has been reinitiated, and additional evaluation will be included in the resulting Biological Opinion to describe any impacts of the fisheries on Atlantic sturgeon and define any measures needed to mitigate those impacts, if necessary. The Biological Opinion is expected to be completed during the 2013 spiny dogfish fishing year.

7.3.2 RSA

Because all spiny dogfish landings count against the overall quota regardless of whether or not an RSA is implemented, neither alternative is expected to change the level of fishing effort. In addition, the manner in which this fishery is operates is not expected to change or be redistributed by gear under either alternative.

Although under Alternative 2 exemptions would be issued that would exempt vessels from possession limits and quota closures, there would be no additional impact on protected resources because the RSA quota is part of, and not in addition to the overall commercial landings limit.

Therefore, each of these alternatives will likely result in minimal adverse effects of fishing on EFH to the extent practicable, pursuant to section 305 (a)(7) of the MSA.

7.4 Human Community Impacts

As noted in Section 6.4, the dealer data associate a very limited number of fishing communities with a high (> 5%) proportion of spiny dogfish revenue to total commercial landings revenue. Additionally, none of the alternatives proposes to decrease revenue relative to the baseline by decreasing the quota. Alternatives 1, 2, and 3 would be increase revenue levels and Alternative 4 would maintain status quo revenue from dogfish landings. As such, positive (Alternatives 1, 2, and 3) or slight positive (Alternative 4) economic impacts are expected under any of the scenarios under consideration.

By itself, maintaining the status quo trip limit (3,000 lb under Alternatives 2 and 4) should result in null impacts to human communities. The increased trip limit proposed under Alternative 1 could result in greater immediate revenue per trip but Alternative 1 is also associated with the greatest potential for an abbreviated season compared to the other alternatives. Alternative 2, which would maintain current trip limits, but increase the quota is associated with the lowest potential for a fishery closure, followed by Alternative 4 and Alternative 3. Nevertheless, the increase in quota under Alternative 1 is expected to generate total positive impacts to human communities over the course of the fishing year compared to the status quo (Alternative 4).

Total spiny dogfish revenue from the last complete fishing year (FY2011) was reported as $4.456 million. Using the average FY2011 price/lb ($0.21) landing about 40 M lb in any year from 2013 - 2015 corresponds to $8.4 million. Alternative 3 which proposes slightly greater quotas would generate slightly more annual revenue, while the no action alternative would generate approximately $7.5 million. Assuming the distribution of landings by port is consistent with FY2011 (Section 6.5), the increases in dogfish revenue should benefit those ports that are more heavily dependent on dogfish revenue than other communities, assuming all other revenue sources do not change (e.g., Virginia Beach / Lynnhaven, VA, Rye, NH, Scituate, MA, and Seabrook, NH – Table 15).

7.4.1 RSA

Under non-preferred RSA Alternative 1, there will be no RSA deducted from the commercial landings for spiny dogfish in 2014 - 2015. Since no RSA is implemented under this alternative, there are no direct economic or social costs. Under non-preferred RSA Alternative 1 for 2014 and 2015, the collaborative efforts among the public, research institutions, and government in broadening the scientific base upon which management decisions are made will not occur. In addition, the Nation will not receive the benefit derived from data or other information about these fisheries for management or stock assessment purposes.

Under preferred Alternative 2, RSAs for spiny dogfish would be allowed. Under the RSA program, successful applicants receive a share of the annual quota for the purpose of conducting scientific research. In fisheries where the entire quota is taken and the fishery is prematurely closed (i.e., the quota is constraining), the economic and social costs of the program are shared among the non-RSA participants in the fishery. That is, each participant in a fishery that utilizes the resource relinquishes a share of the amount of quota retained in the RSA quota.

The Council recommended research set-aside quotas of 3% of the commercial quota for 2014 and 2015. The research set aside quantities associated with each alternative evaluated in this document are shown in Table 19.

Assuming the fishing year 2011 ex-vessel price ($0.21/lb), the 2014 RSA could be worth as much as $263 k, $274 k, and $224 k under Alternatives 1/2, 3, and 4, respectively. For 2015, the RSA could be worth as much as $262 k, $273 k, and $224 k under Alternatives 1, 2, and 3, respectively.

Table 19. RSA (M lb) under each Quota/Trip Limit Alternative.

	Initial Quota		RSA Deduction		RSA Deduction	
Quota and Trip Limit Alternatives	**2014**	**2015**	**2014**	**2015**	**2014**	**2015**
Preferred Commercial Quota (Alt 1 and 2)	41.784	41.578	1.254	1.247	40.530	40.331
Non-Preferred Commercial Quota (Alt 3)	43.52	43.307	1.306	1.299	42.214	42.008
Non-Preferred Commercial Quota (Alt 4)	35.694	35.694	1.071	1.071	34.623	34.623

It is important to stress that the RSA amount used to evaluate the alternatives presented in this document is the maximum RSA allowed (3% of the TAL) to support collaborative research projects among the public, research institutions, and NMFS. The actual RSA for fishing year 2014 and 2015 will depend on the specific amounts requested by the approved research projects and may be equal to or less than the 3% maximum allowable depending on which projects are approved and the specific RSA amounts requested. NMFS will adjust quotas based on updated information on RSA, overages and/or transfers as part of the final rule that implements the 2014 and 2015 specifications when the data are more complete.

7.5 Cumulative Effects Analysis

A cumulative effects analysis (CEA) is required by the Council on Environmental Quality (CEQ) (40 CFR part 1508.7). The purpose of CEA is to consider the combined effects of many actions on the human environment over time that would be missed if each action were evaluated separately. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective, but rather, the intent is to focus on those effects that are truly meaningful. A formal cumulative impact assessment is not necessarily required as part of an EA under NEPA as long as the significance of cumulative impacts have been

considered (U.S. EPA 1999). The following remarks address the significance of the expected cumulative impacts as they relate to the federally managed spiny dogfish fishery.

7.5.1 Consideration of the VECs

In section 6.0 (Description of the Affected Environment), the VECs that exist within the spiny dogfish fishery environment are identified. Therefore, the significance of the cumulative effects will be discussed in relation to the VECs listed below.

1. Managed resource (spiny dogfish)
2. Non-target species
3. Habitat including EFH for the managed resource and non-target species
4. ESA listed and MMPA protected species
5. Human communities

7.5.2 Geographic Boundaries

The analysis of impacts focuses on actions related to the harvest of spiny dogfish. The core geographic scope for each of the VECs is focused on the Western Atlantic Ocean (section 6.0). The core geographic scopes for the managed resources are the range of the management units (section 6.1). For non-target species, those ranges may be expanded and would depend on the biological range of each individual non-target species in the Western Atlantic Ocean. For habitat, the core geographic scope is focused on EFH within the EEZ but includes all habitat utilized by spiny dogfish and non-target species in the Western Atlantic Ocean. The core geographic scope for endangered and protected resources can be considered the overall range of these VECs in the Western Atlantic Ocean. For human communities, the core geographic boundaries are defined as those U.S. fishing communities directly involved in the harvest or processing of the managed resources, which were found to occur in coastal states from Maine through North Carolina (section 6.4).

7.5.3 Temporal Boundaries

The temporal scope of past and present actions for VECs is primarily focused on actions that have occurred after FMP implementation (1990). For endangered and other protected resources, the scope of past and present actions is on a species-by-species basis (section 6.3) and is largely focused on the 1980s and 1990s through the present, when NMFS began generating stock assessments for marine mammals and sea turtles that inhabit waters of the U.S. EEZ. The temporal scope of future actions for all five VECs extends about three years (2015) into the future, because events beyond that time are not reasonably foreseeable.

7.5.4 Actions Other Than Those Proposed in these Specifications

The impacts of each of the alternatives considered in this specifications document are given in section 7.1 through 7.4. Table 23 presents meaningful past (P), present (Pr), or reasonably foreseeable future (RFF) actions to be considered other than those actions being considered in this specifications document. These impacts are described in chronological order and qualitatively, as the actual impacts of these actions are too complex to be quantified in a meaningful way. When any of these abbreviations occur together (i.e., P, Pr, RFF), it indicates that some past actions are still relevant to the present and/or future actions.

Past and Present Actions

The historical management practices of the Council have resulted in positive impacts on the health of the spiny dogfish stock (section 6.1). Actions have been taken to manage the commercial fisheries for this species through amendment actions. In addition, the annual specifications process is intended to provide the opportunity for the Council and NMFS to regularly assess the status of the fishery and to make necessary adjustments to ensure that there is a reasonable expectation of meeting the objectives of the FMP. The statutory basis for federal fisheries management is the MSA. To the degree with which this regulatory regime is complied, the cumulative impacts of past, present, and reasonably foreseeable future federal fishery management actions on the VECs should generally be associated with positive long-term outcomes. Constraining fishing effort through regulatory actions can often have negative short-term socioeconomic impacts. These impacts are usually necessary to bring about long-term sustainability of a given resource, and as such, should, in the long-term, promote positive effects on human communities, especially those that are economically dependent upon the spiny dogfish stock.

Non-fishing activities that introduce chemical pollutants, sewage, changes in water temperature, salinity, dissolved oxygen, and suspended sediment into the marine environment pose a risk to all of the identified VECs. Human-induced non-fishing activities tend to be localized in nearshore areas and marine project areas where they occur. Examples of these activities include, but are not limited to agriculture, port maintenance, beach nourishment, coastal development, marine transportation, marine mining, dredging and the disposal of dredged material. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and, as such, may indirectly constrain the sustainability of the managed resources, non-target species, and protected resources. Decreased habitat suitability would tend to reduce the tolerance of these VECs to the impacts of fishing effort. Mitigation of this outcome through regulations that would reduce fishing effort could then negatively impact human communities. The overall impact to the affected species and its habitat on a population level is unknown, but likely neutral to low negative, since a large portion of this species has a limited or minor exposure to these local non-fishing perturbations.

In addition to guidelines mandated by the MSA, NMFS reviews these types of effects through the review processes required by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act for certain activities that are regulated by federal, state, and local authorities. The jurisdiction of these activities is in "waters of the U.S." and includes both riverine and marine habitats.

Reasonably Foreseeable Future Actions

For many of the proposed non-fishing activities to be permitted under other federal agencies (such as beach nourishment, offshore wind facilities, etc.), those agencies would conduct examinations of potential impacts on the VECs. The MSA (50 CFR 600.930) imposes an obligation on other federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH. The eight Fishery Management Councils are engaged in this review process by making comments and recommendations on any federal or state action that may affect habitat, including EFH, for their managed species and by commenting on actions likely to substantially affect habitat, including EFH.

In addition, under the Fish and Wildlife Coordination Act (Section 662), “whenever the waters of any stream or other body of water are proposed or authorized to be impounded, diverted, the channel deepened, or the stream or other body of water otherwise controlled or modified for any purpose whatever, including navigation and drainage, by any department or agency of the U.S., or by any public or private agency under federal permit or license, such department or agency first shall consult with the U.S. Fish and Wildlife Service (USFWS), Department of the Interior, and with the head of the agency exercising administration over the wildlife resources of the particular state wherein the” activity is taking place. This act provides another avenue for review of actions by other federal and state agencies that may impact resources that NMFS manages in the reasonably foreseeable future.

In addition, NMFS and the USFWS share responsibility for implementing the ESA. ESA requires NMFS to designate "critical habitat" for any species it lists under the ESA (i.e., areas that contain physical or biological features essential to conservation, which may require special management considerations or protection) and to develop and implement recovery plans for threatened and endangered species. The ESA provides another avenue for NMFS to review actions by other entities that may impact endangered and protected resources whose management units are under NMFS’ jurisdiction.

7.5.5 Magnitude and Significance of Cumulative Effects

In determining the magnitude and significance of the cumulative effects, the additive and synergistic effects of the proposed action, as well as past, present, and future actions, must be taken into account. The following section discusses the effects of these actions on each of the VECs.

Table 20. Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this specifications document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr Original FMP and subsequent Amendments and Frameworks to the FMP	Established commercial management measures	**Indirect Positive** Regulatory tool available to rebuild and manage stocks	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Reduced fishing effort	**Indirect Positive** Benefited domestic businesses
P, Pr Spiny dogfish Specifications	Establish annual quotas, trip limits	**Indirect Positive** Regulatory tool to specify catch limits, and other regulation; allows response to annual stock updates	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Reduced effort levels and gear requirements	**Indirect Positive** Benefited domestic businesses
P, Pr Developed and Applied Standardized Bycatch Reporting Methodology	Established acceptable level of precision and accuracy for monitoring of bycatch in fisheries	**Neutral** May improve data quality for monitoring total removals of managed resource	**Neutral** May improve data quality for monitoring removals of non-target species	**Neutral** Will not affect distribution of effort	**Neutral** May increase observer coverage and will not affect distribution of effort	**Potentially Indirect Negative** May impose an inconvenience on vessel operations
Pr, RFF Omnibus Amendment ACLs/AMs Implemented	Establish ACLs and AMs for all three plan species	**Potentially Indirect Positive** Pending full analysis	**Potentially Indirect Positive** Pending full analysis	**Potentially Indirect Positive** Pending full analysis	**Potentially Indirect Positive** Pending full analysis	**Potentially Indirect Positive** Pending full analysis
P, Pr, RFF Agricultural runoff	Nutrients applied to agricultural land are introduced into aquatic systems	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality negatively affects resource
P, Pr, RFF Port maintenance	Dredging of coastal, port and harbor areas for port maintenance	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Direct Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects

Table 20 (Continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this specifications document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
P, Pr, RFF Offshore disposal of dredged materials	Disposal of dredged materials	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality	**Indirect Negative** Reduced habitat quality negatively affects resource viability
P, Pr, RFF Beach nourishment	Offshore mining of sand for beaches	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Mixed** Positive for mining companies, possibly negative for fishing industry
	Placement of sand to nourish beach shorelines	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Positive** Beachgoers like sand; positive for tourism
P, Pr, RFF Marine transportation	Expansion of port facilities, vessel operations and recreational marinas	**Indirect Negative** Localized decreases in habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Direct Negative** Reduced habitat quality	**Indirect Negative** Localized decreases in habitat quality	**Mixed** Positive for some interests, potential displacement for others
P, Pr, RFF Installation of pipelines, utility lines and cables	Transportation of oil, gas and energy through pipelines, utility lines and cables	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Direct Negative** Reduced habitat quality	**Potentially Direct Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects

Table 20 (Continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this specifications document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
RFF Offshore Wind Energy Facilities (within 3 years)	Construction of wind turbines to harness electrical power (Several proposed from ME through NC, including NY/NJ, DE, and VA)	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Potentially Direct Negative** Localized decreases in habitat quality possible	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects
Pr, RFF Liquefied Natural Gas (LNG) terminals (within 3 years)	Transport natural gas via tanker to terminals offshore and onshore (1 terminal built in MA; 1 under construction; proposed in RI, NY, NJ and DE)	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Potentially Direct Negative** Localized decreases in habitat quality possible	**Uncertain – Likely Indirect Negative** Dependent on mitigation effects	**Uncertain – Likely Mixed** Dependent on mitigation effects
RFF Convening Gear Take Reduction Teams (within next 3 years)	Recommend measures to reduce mortality and injury to marine mammals	**Indirect Positive** Will improve data quality for monitoring total removals	**Indirect Positive** Reducing availability of gear could reduce bycatch	**Indirect Positive** Reducing availability of gear could reduce gear impacts	**Indirect Positive** Reducing availability of gear could reduce encounters	**Indirect Negative** Reducing availability of gear could reduce revenues
RFF Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (w/in next 3 years)	May recommend strategies to prevent the bycatch of sea turtles in commercial fisheries operations	**Indirect Positive** Will improve data quality for monitoring total removals	**Indirect Positive** Reducing availability of gear could reduce bycatch	**Indirect Positive** Reducing availability of gear could reduce gear impacts	**Indirect Positive** Reducing availability of gear could reduce encounters	**Indirect Negative** Reducing availability of gear could reduce revenues

Table 20 (Continued). Impacts of Past (P), Present (Pr), and Reasonably Foreseeable Future (RFF) Actions on the five VECs (not including those actions considered in this specifications document).

Action	Description	Impacts on Managed Resource	Impacts on Non-target Species	Impacts on Habitat and EFH	Impacts on Protected Species	Impacts on Human Communities
RFF Spiny Dogfish Amendment 3	Allow RSA, Update EFH, Maintain Quota through Rulemaking, Single Coastwide Quota	**Neutral** Largely Administrative Actions	**Neutral** Largely Administrative Actions	**Neutral** Largely Administrative Actions	**Neutral** Largely Administrative Actions	**Neutral** Largely Administrative Actions
Pr, RFF Cape Cod Spiny Dogfish Exempted Area	Allow Access to Area Otherwise Closed to Groundfish Gear	**Neutral** Catch and effort will be controlled by quota	**Neutral** Total Effort will be limited by quota	**Neutral** Total Effort will be limited by quota	**Neutral** Total Effort will be limited by quota	**Neutral** Total Effort will be limited by quota
Pr, RFF NE Multispecies Framework 48	Measures to reduce costs, add flexibility for groundfish vessels	**Neutral** Largely administrative actions	**Neutral** Largely administrative actions	**Neutral** Largely administrative actions	**Neutral** Largely administrative actions	**Positive** Expected to partially improve short-term profitability
Pr, RFF NE Multispecies Framework 50	Specifies Groundfish ACLs, trip limits, modifies AMs	**Positive** Low ACLs may reduce overall effort	**Positive** Low ACLs may reduce overall effort	**Positive** Low ACLs may reduce overall effort	**Positive** Low ACLs may reduce overall effort	**Negative** Expected loss of groundfish revenue
Pr, RFF NE Multispecies Sector Plans	Sector exemptions	**Neutral** Catch and effort will be controlled by quota	**Neutral** Total Effort will be limited by quota	**Neutral** Total Effort will be limited by quota	**Neutral** Total Effort will be limited by quota	**Neutral** Total Effort will be limited by quota
RFF Monkfish Emergency Action	Eliminate Monkfish Trip Limits in Northern Management Area	**Negative** Bycatch mortality could increase	**Negative** Bycatch mortality could increase	**Negative** Trawl impacts on EFH would increase	**Negative** Gear encounters could increase	**Mixed** Econ mitigation of negative impacts of groundfish reductions

7.5.5.1 Managed Resources

Those past, present, and reasonably foreseeable future actions, whose effects may impact the managed resources and the direction of those potential impacts, are summarized in Table 23. The indirectly negative actions described in Table 23 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on the managed resource is expected to be limited due to a lack of exposure to the population at large. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on productivity of the managed resources is unquantifiable. As described above (section 7.5.4), NMFS has several means under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources under NMFS' jurisdiction.

Past fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on the managed resource. It is anticipated that the future management actions, described in Table 24, will result in additional indirect positive effects on the managed resources through actions which reduce and monitor bycatch, protect habitat, and protect ecosystem services on which spiny dogfish productivity depends. The 2012 fishing year was the first year of implementation for an Amendment which requires specification of ACLs/AMs and catch accountability. This represents a major change to the current management program and is expected to lead to improvements in resource sustainability over the long-term. These impacts could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to spiny dogfish have had a positive cumulative effect.

Commercial quotas for the managed resource have been specified to ensure the stock is managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The impacts from annual specification of management measures established in previous years on the managed resource are largely dependent on how effective those measures were in meeting their intended objectives (i.e., preventing overfishing, achieve OY) and the extent to which mitigating measures were effective. The proposed action in this document would positively reinforce the past and anticipated positive cumulative effects on the spiny dogfish stock, by achieving the objectives specified in the FMP. Therefore, the proposed action would not have any significant effect on the managed resources individually or in conjunction with other anthropogenic activities (see Table 24).

Table 21. Summary of the effects of past, present, and reasonably foreseeable future actions on the managed resource.

Action	Past to the Present		Reasonably Foreseeable Future
Original FMP and subsequent Amendments and Frameworks to the FMP	**Indirect Positive**		
Spiny dogfish Specifications	**Indirect Positive**		
Developed and Implement Standardized Bycatch Reporting Methodology	**Neutral**		
Amendment to address ACLs/AMs implemented		**Potentially Indirect Positive**	
Agricultural runoff	**Indirect Negative**		
Port maintenance	**Uncertain – Likely Indirect Negative**		
Offshore disposal of dredged materials	**Indirect Negative**		
Beach nourishment – Offshore mining	**Indirect Negative**		
Beach nourishment – Sand placement	**Indirect Negative**		
Marine transportation	**Indirect Negative**		
Installation of pipelines, utility lines and cables	**Uncertain – Likely Indirect Negative**		
National Offshore Aquaculture Act of 2007	**Potentially Indirect Negative**		
Offshore Wind Energy Facilities (within 3 years)			**Uncertain – Likely Indirect Negative**
Liquefied Natural Gas (LNG) terminals (within 3 years)		**Uncertain – Likely Indirect Negative**	
Convening Gear Take Reduction Teams (within 3 years)			**Indirect Positive**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 3 years)			**Indirect Positive**
Spiny Dogfish Amendment 3			**Neutral**
Cape Cod Spiny Dogfish Exempted Area			**Neutral**
NE Multispecies Framework 48			**Neutral**
NE Multispecies Framework 50			**Indirect Positive**
NE Multispecies Sector Plans			**Neutral**
Monkfish Emergency Action			**Negative**
Summary of past, present, and future actions excluding those proposed in this specifications document	**Overall, actions have had, or will have, positive impacts on the managed resources** *** See section 7.5.5.1 for explanation.**		

7.5.5.2 Non-Target Species or Bycatch

Those past, present, and reasonably foreseeable future actions, whose effects may impact non-target species and the direction of those potential impacts, are summarized in Table 23. The effects of indirectly negative actions described in Table 23 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on non-target species is expected to be limited due to a lack of exposure to the population at large. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on productivity of non-target resources and the oceanic ecosystem is unquantifiable. As described above (section 7.5.4), NMFS has several means under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' managed resources prior to permitting or implementation of those projects. At this time, NMFS can consider impacts to non-target species (federally-managed or otherwise) and comment on potential impacts. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on resources within NMFS' jurisdiction.

Past fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on non-target species. Implementation and application of a standardized bycatch reporting methodology would have a particular impact on non-target species by improving the methods which can be used to assess the magnitude and extent of a potential bycatch problem. Better assessment of potential bycatch issues allows more effective and specific management measures to be developed to address a bycatch problem. It is anticipated that future management actions, described in Table 25, will result in additional indirect positive effects on non-target species through actions which reduce and monitor bycatch, protect habitat, and protect ecosystem services on which the productivity of many of these non-target resources depend. The impacts of these future actions could be broad in scope, and it should be noted the managed resource and non-target species are often coupled in that they utilize similar habitat areas and ecosystem resources on which they depend. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful have had a positive cumulative effect on non-target species.

Commercial quotas and trip limits for the managed resource have been specified to ensure the stock is managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The proposed actions in this document have impacts that range from neutral to positive or negative impacts, and would not change the past and anticipated positive cumulative effects on non-target species and thus, would not have any significant effect on these species individually or in conjunction with other anthropogenic activities (Table 25).

Table 22. Summary of the effects of past, present, and reasonably foreseeable future actions on the non-target species.

Action	Past to the Present		Reasonably Foreseeable Future
Original FMP and subsequent Amendments and Frameworks to the FMP	**Indirect Positive**		
Spiny dogfish Specifications	**Indirect Positive**		
Developed and Implement Standardized Bycatch Reporting Methodology	**Neutral**		
Amendment to address ACLs/AMs implemented		**Potentially Indirect Positive**	
Agricultural runoff	**Indirect Negative**		
Port maintenance	**Uncertain – Likely Indirect Negative**		
Offshore disposal of dredged materials	**Indirect Negative**		
Beach nourishment – Offshore mining	**Indirect Negative**		
Beach nourishment – Sand placement	**Indirect Negative**		
Marine transportation	**Indirect Negative**		
Installation of pipelines, utility lines and cables	**Uncertain – Likely Indirect Negative**		
National Offshore Aquaculture Act of 2007	**Potentially Indirect Negative**		
Offshore Wind Energy Facilities (within 3 years)			**Uncertain – Likely Indirect Negative**
Liquefied Natural Gas (LNG) terminals (within 3 years)		**Uncertain – Likely Indirect Negative**	
Convening Gear Take Reduction Teams (within 3 years)			**Indirect Positive**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 3 years)			**Indirect Positive**
Spiny Dogfish Amendment 3			**Neutral**
Cape Cod Spiny Dogfish Exempted Area			**Neutral**
NE Multispecies Framework 48			**Neutral**
NE Multispecies Framework 50			**Indirect Positive**
NE Multispecies Sector Plans			**Neutral**
Monkfish Emergency Action			**Negative**
Summary of past, present, and future actions excluding those proposed in this specifications document	**Overall, actions have had, or will have, positive impacts on non-target species * See section 7.5.5.2 for explanation.**		

7.5.5.3 Habitat (Including EFH)

Those past, present, and reasonably foreseeable future actions, whose effects may impact habitat (including EFH) and the direction of those potential impacts, are summarized in Table 23. The direct and indirect negative actions described in Table 23 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on habitat is expected to be limited due to a lack of exposure to habitat at large. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on habitat and EFH is unquantifiable. As described above (section 7.5.4), NMFS has several means under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' managed resources and the habitat on which they rely prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of direct and indirect negative impacts those actions could have on habitat utilized by resources under NMFS' jurisdiction.

Past fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on habitat and EFH. The actions have constrained fishing effort at a large scale and locally, and have implemented gear requirements, which may reduce habitat impacts. As required under these FMP actions, EFH and HAPCs were designated for the managed resources. It is anticipated that the future management actions, described in Table 26, will result in additional direct or indirect positive effects on habitat through actions which protect EFH for federally-managed species and protect ecosystem services on which these species' productivity depends. These impacts could be broad in scope. All of the VECs are interrelated; therefore, the linkages among habitat quality and EFH, managed resources and non-target species productivity, and associated fishery yields should be considered. For habitat and EFH, there are direct and indirect negative effects from actions which may be localized or broad in scope; however, positive actions that have broad implications have been, and it is anticipated will continue to be, taken to improve the condition of habitat. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to habitat have had a neutral to positive cumulative effect.

Commercial quotas and trip limits for the managed resource have been specified to ensure the stock is managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The proposed actions in this document would not change the past and anticipated cumulative effects on habitat and thus, would not have any significant effect on habitat individually or in conjunction with other anthropogenic activities (Table 26).

Table 23. Summary of the effects of past, present, and reasonably foreseeable future actions on the habitat.

Action	Past to the Present		Reasonably Foreseeable Future
Original FMP and subsequent Amendments and Frameworks to the FMP	**Indirect Positive**		
Spiny dogfish Specifications	**Indirect Positive**		
Developed and Implement Standardized Bycatch Reporting Methodology	**Neutral**		
Amendment to address ACLs/AMs implemented		**Potentially Indirect Positive**	
Agricultural runoff	**Indirect Negative**		
Port maintenance	**Uncertain – Likely Indirect Negative**		
Offshore disposal of dredged materials	**Indirect Negative**		
Beach nourishment – Offshore mining	**Indirect Negative**		
Beach nourishment – Sand placement	**Indirect Negative**		
Marine transportation	**Indirect Negative**		
Installation of pipelines, utility lines and cables	**Uncertain – Likely Indirect Negative**		
National Offshore Aquaculture Act of 2007	**Potentially Indirect Negative**		
Offshore Wind Energy Facilities (within 3 years)			**Uncertain – Likely Indirect Negative**
Liquefied Natural Gas (LNG) terminals (within 3 years)		**Uncertain – Likely Indirect Negative**	
Convening Gear Take Reduction Teams (within 3 years)			**Indirect Positive**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 3 years)			**Indirect Positive**
Spiny Dogfish Amendment 3			**Neutral**
Cape Cod Spiny Dogfish Exempted Area			**Neutral**
NE Multispecies Framework 48			**Neutral**
NE Multispecies Framework 50			**Indirect Positive**
NE Multispecies Sector Plans			**Neutral**
Monkfish Emergency Action			**Negative**
Summary of past, present, and future actions excluding those proposed in this specifications document	**Overall, actions have had, or will have, positive impacts on habitat** *** See section 7.5.5.3 for explanation.**		

7.5.5.4 ESA Listed and MMPA Protected Species

Those past, present, and reasonably foreseeable future actions, whose effects may impact the protected resources and the direction of those potential impacts, are summarized in Table 23. The indirectly negative actions described in Table 23 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on protected resources, relative to the range of many of the protected resources, is expected to be limited due to a lack of exposure to the population at large. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude, although the impact on protected resources either directly or indirectly is unquantifiable. As described above (section 7.5.4), NMFS has several means, including ESA, under which it can review non-fishing actions of other federal or state agencies that may impact NMFS' protected resources prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on protected resources under NMFS' jurisdiction.

Past fishery management actions taken through the FMP and annual specification process have had a positive cumulative effect on ESA listed and MMPA protected species through the reduction of fishing effort (potential interactions) and implementation of gear requirements. It is anticipated that the future management actions, specifically those recommended by the ALWTRT and the development of strategies for sea turtle conservation described in Table 27, will result in additional indirect positive effects on the protected resources. These impacts could be broad in scope. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to protected resources have had a positive cumulative effect.

Commercial quotas and trip limits for the managed resource have been specified to ensure the stock is managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The proposed actions in this document would not change the past and anticipated cumulative effects on ESA listed and MMPA protected species and thus, would not have any significant effect on protected resources individually or in conjunction with other anthropogenic activities (Table 27).

NMFS will implement any appropriate measures outlined in the BO to mitigate harm to Atlantic sturgeon, if necessary. Given the comparatively low contribution of the spiny dogfish fishery to Atlantic sturgeon mortality, the magnitude of interactions during the 2013 - 2015 fishing years are not likely to result in jeopardy to the species based on current assessments of each DPS (Kocik et al. 2013). The level of interactions with the spiny dogfish fishery under this action, or cumulatively with other past, present, or reasonably foreseeable future actions, are not likely to have a significant adverse impact on the overall Atlantic sturgeon population, or any of the DPS's. Therefore, cumulative impacts resulting from the approval of the spiny dogfish fishery specifications are not likely to be significant.

Table 24. Summary of the effects of past, present, and reasonably foreseeable future actions on the protected resources.

Action	Past to the Present		Reasonably Foreseeable Future
Original FMP and subsequent Amendments and Frameworks to the FMP	**Indirect Positive**		
Spiny dogfish Specifications	**Indirect Positive**		
Developed and Implement Standardized Bycatch Reporting Methodology	**Neutral**		
Amendment to address ACLs/AMs implemented		**Potentially Indirect Positive**	
Agricultural runoff	**Indirect Negative**		
Port maintenance	**Uncertain – Likely Indirect Negative**		
Offshore disposal of dredged materials	**Indirect Negative**		
Beach nourishment – Offshore mining	**Indirect Negative**		
Beach nourishment – Sand placement	**Indirect Negative**		
Marine transportation	**Indirect Negative**		
Installation of pipelines, utility lines and cables	**Uncertain – Likely Indirect Negative**		
National Offshore Aquaculture Act of 2007	**Potentially Indirect Negative**		
Offshore Wind Energy Facilities (within 3 years)			**Uncertain – Likely Indirect Negative**
Liquefied Natural Gas (LNG) terminals (within 3 years)		**Uncertain – Likely Indirect Negative**	
Convening Gear Take Reduction Teams (within 3 years)			**Indirect Positive**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 3 years)			**Indirect Positive**
Spiny Dogfish Amendment 3			**Neutral**
Cape Cod Spiny Dogfish Exempted Area			**Neutral**
NE Multispecies Framework 48			**Neutral**
NE Multispecies Framework 50			**Indirect Positive**
NE Multispecies Sector Plans			**Neutral**
Monkfish Emergency Action			**Negative**
Summary of past, present, and future actions excluding those proposed in this specifications document	**Overall, actions have had, or will have, positive impacts on protected resources * See section 7.5.5.4 for explanation.**		

7.5.5.5 Human Communities

Those past, present, and reasonably foreseeable future actions, whose effects may impact human communities and the direction of those potential impacts, are summarized in Table 23. The indirectly negative actions described in Table 23 are localized in nearshore areas and marine project areas where they occur. Therefore, the magnitude of those impacts on human communities is expected to be limited in scope. It may, however, displace fishermen from project areas. Agricultural runoff may be much broader in scope, and the impacts of nutrient inputs to the coastal system may be of a larger magnitude. This may result in indirect negative impacts on human communities by reducing resource availability; however, this effect is unquantifiable. As described above (section 7.5.4), NMFS has several means under which it can review non-fishing actions of other federal or state agencies prior to permitting or implementation of those projects. This serves to minimize the extent and magnitude of indirect negative impacts those actions could have on human communities.

Past fishery management actions taken through the FMP and annual specification process have had both positive and negative cumulative effects by benefiting domestic fisheries through sustainable fishery management practices, while at the same time potentially reducing the availability of the resource to all participants. Sustainable management practices are, however, expected to yield broad positive impacts to fishermen, their communities, businesses, and the nation as a whole. It is anticipated that the future management actions, described in Table 28, will result in positive effects for human communities due to sustainable management practices, although additional indirect negative effects on the human communities could occur through management actions that may implement gear requirements or area closures and thus, reduce revenues. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to human communities have had an overall positive cumulative effect.

Commercial quotas and trip limits for the managed resource have been specified to ensure the stock is managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The impacts from annual specification measures established in previous years on the managed resources are largely dependent on how effective those measures were in meeting their intended objectives and the extent to which mitigating measures were effective. Overages may alter the timing of commercial fishery revenues (revenues realized a year earlier), and there may be impacts on some fishermen caused by unexpected reductions in their opportunities to earn revenues in the commercial fisheries in the year during which the overages are deducted.

Despite the potential for neutral to positive short-term effects on human communities, the expectation is that there would be a positive long-term effect on human communities due to the long-term sustainability of spiny dogfish. Overall, the proposed actions in this document would not change the past and anticipated cumulative effects on human communities and thus, would not have any significant effect on human communities individually, or in conjunction with other anthropogenic activities (Table 28).

Table 25. Summary of the effects of past, present, and reasonably foreseeable future actions on human communities.

Action	Past to the Present		Reasonably Foreseeable Future
Original FMP and subsequent Amendments and Frameworks to the FMP	**Indirect Positive**		
Spiny dogfish Specifications	**Indirect Positive**		
Developed and Implement Standardized Bycatch Reporting Methodology	**Neutral**		
Amendment to address ACLs/AMs implemented		**Potentially Indirect Positive**	
Agricultural runoff	**Indirect Negative**		
Port maintenance	**Uncertain – Likely Indirect Negative**		
Offshore disposal of dredged materials	**Indirect Negative**		
Beach nourishment – Offshore mining	**Indirect Negative**		
Beach nourishment – Sand placement	**Indirect Negative**		
Marine transportation	**Indirect Negative**		
Installation of pipelines, utility lines and cables	**Uncertain – Likely Indirect Negative**		
National Offshore Aquaculture Act of 2007	**Potentially Indirect Negative**		
Offshore Wind Energy Facilities (within 3 years)			**Uncertain – Likely Indirect Negative**
Liquefied Natural Gas (LNG) terminals (within 3 years)		**Uncertain – Likely Indirect Negative**	
Convening Gear Take Reduction Teams (within 3 years)			**Indirect Positive**
Strategy for Sea Turtle Conservation for the Atlantic Ocean and the Gulf of Mexico Fisheries (within next 3 years)			**Indirect Positive**
Spiny Dogfish Amendment 3			**Neutral**
Cape Cod Spiny Dogfish Exempted Area			**Neutral**
NE Multispecies Framework 48			**Neutral**
NE Multispecies Framework 50			**Indirect Negative**
NE Multispecies Sector Plans			**Neutral**
Monkfish Emergency Action			**Mixed**
Summary of past, present, and future actions excluding those proposed in this specifications document	**Overall, actions have had, or will have, positive impacts on human communities** *** See section 7.5.5.5 for explanation.**		

7.5.6 Preferred Action on all the VECS

The Council has identified its preferred action alternatives in section 5.0. The cumulative effects of the range of actions considered in this document can be considered to make a determination if significant cumulative effects are anticipated from the preferred action.

The direct and indirect impacts of the proposed action on the VECs are described in sections 7.1 through 7.4. The magnitude and significance of the cumulative effects, which include the additive and synergistic effects of the proposed action, as well as past, present, and future actions, have been taken into account throughout this section 7.5. The action proposed in this annual specifications document builds off action taken in the original FMP and subsequent amendments and framework documents. When this action is considered in conjunction with all the other pressures placed on fisheries by past, present, and reasonably foreseeable future actions, it is not expected to result in any significant impacts, positive or negative. Based on the information and analyses presented in these past FMP documents and this document, there are no significant cumulative effects associated with the action proposed in this document (Table 29).

Table 26. Magnitude and significance of the cumulative effects; the additive and synergistic effects of the preferred action, as well as past, present, and future actions.

VEC	Status in 2011	Net Impact of P, Pr, and RFF Actions	Impact of the Preferred Action	Significant Cumulative Effects
Managed Resource	Complex and variable (Section 6.1)	Positive (Sections 7.5.4 and 7.5.5.1)	Neutral to positive (Sections 7.1)	**None**
Non-target Species	Complex and variable (Section 6.1)	Positive (Sections 7.5.4 and 7.5.5.2)	Slight negative to slight positive (Sections 7.1)	**None**
Habitat	Complex and variable (Section 6.2)	Neutral to positive (Sections 7.5.4 and 7.5.5.3)	Slight negative to slight positive (Sections 7.2)	**None**
Protected Resources	Complex and variable (Section 6.3)	Positive (Sections 7.5.4 and 7.5.5.4)	Slight negative to slight positive (Sections 7.3)	**None**
Human Communities	Complex and variable (Section 6.4)	Positive (Sections 7.5.4 and 7.5.5.5)	Negative (highly uncertain) to short-term Positive (Sections 7.4)	**None**

8.0 APPLICABLE LAWS

8.1 National Environmental Policy Act of 1969 (NEPA)

8.1.1 Finding of No Significant Environmental Impact (FONSI)

National Oceanic and Atmospheric Administration Administrative Order (NAO) 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality (CEQ) regulations at 40 C.F.R. 1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. These include:

1) Can the proposed action reasonably be expected to jeopardize the sustainability of any target species that may be affected by the action?

The proposed action is intended to prevent overfishing and maintain spiny dogfish biomass above the biomass target. This action is not expected to jeopardize the sustainability of any target species that may be affected by the action. As discussed in Section 6.1.2, the spiny dogfish stock is rebuilt, is not overfished, and overfishing is not occurring.

2) Can the proposed action reasonably be expected to jeopardize the sustainability of any non-target species?

The proposed action is not expected to jeopardize the sustainability of any non-target species. The proposed measure is not expected to significantly alter fishing methods or activities. There is limited directed fishing for spiny dogfish using gear that incidentally catches other species. The proposed action should not significantly increase directed dogfish fishing in the EEZ. As such, the incidental catch of non-target species should not increase significantly.

3) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in FMPs?

The proposed action is not expected to cause substantial damage to the ocean, coastal habitats, and/or EFH as defined under the MSA and identified in the FMP. There has been an overall decline in bottom trawling activity for groundfish in the Northeast region in recent years and management measures (closed areas) are in place for minimizing the adverse habitat impacts of bottom trawling and dredging. Therefore, fishing activity in the limited spiny dogfish trawl fishery is not expected to increase existing levels of minimal adverse impacts to EFH and do not require any mitigation.

4) Can the proposed action be reasonably expected to have a substantial adverse impact on public health or safety?

No changes in fishing behavior that would affect safety are anticipated. The overall effect of the proposed action would not adversely impact public health or safety.

5) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, marine mammals, or critical habitat of these species?

The proposed action is not reasonably expected to have an adverse impact on endangered or threatened species, marine mammals, or critical habitat for these species. While there may be some adverse impacts by maintaining fishing effort through the proposed action, that impact is not expected to be significant. Because the abundance of dogfish has increased greatly, effort is unlikely to increase significantly. In addition, measures in place to protect endangered or threatened species, marine mammals, and critical habitat for these species would remain in place.

The endangered species of greatest concern potentially impacted by this action is Atlantic sturgeon. However, for the reasons described in Section 7.3, NMFS has determined that the continued operation of the Spiny Dogfish FMP is not likely to jeopardize the continued existence of any Atlantic sturgeon DPS. Given the comparatively low contribution of the spiny dogfish fishery to Atlantic sturgeon mortality, the magnitude of interactions during the 2013 - 2015 fishing years are not likely to result in jeopardy to the species based on current assessments of each DPS (Kocik et al. 2013). The spiny dogfish fishery may interact with Atlantic sturgeon. However, the more recent, larger population estimate derived from NEAMAP data (Kocik et al. 2013) suggests that the level of interactions with the spiny dogfish fishery is not likely to have a significant adverse impact on the overall Atlantic sturgeon population, or any of the DPS's. Since the Atlantic sturgeon DPSs have been listed as endangered and threatened under the ESA, the ESA Section 7 consultation for the spiny dogfish fishery has been reinitiated, and additional evaluation will be included in the resulting Biological Opinion to describe any impacts of the fisheries on Atlantic sturgeon and define any measures needed to mitigate those impacts, if necessary.

6) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

The proposed action is not expected to have a substantial impact on biodiversity and ecosystem function within the affected area. The action is not expected to significantly alter fishing methods or activities or fishing effort or the spatial and/or temporal distribution of current fishing effort.

7) Are significant social or economic impacts interrelated with natural or physical environmental effects?

The proposed action is not expected to have a substantial impact on the natural or physical environment. The proposed action is not expected to significantly alter fishing

methods or activities, fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, there are no social or economic impacts interrelated with natural or physical environmental effects.

8) Are the effects on the quality of the human environment likely to be highly controversial?

The impacts of the proposed measures on the human environment are described in Section 7 of the EA. The proposed actions merely revise the annual quota and trip limit for the 2013 - 2015 dogfish fishery. The proposed action is based upon measures contained in the FMP which have been in place for years. In addition, the scientific information upon which the annual quotas are based has been peer-reviewed and is the most recent information available. Therefore, the measures contained in this action are not expected to be highly controversial.

9) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers or ecologically critical areas?

It is possible that historic or cultural resources such as shipwrecks could be present in the area where the dogfish fishery is prosecuted. However, vessels try to avoid fishing too close to wrecks due to the possible loss or entanglement of fishing gear. Therefore, it is not likely that the proposed action would result in substantial impacts to unique areas.

10) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

The impacts of the proposed action on the human environment are described in Section 7.0 of the EA. The proposed action addresses the commercial quota and trip limit for the spiny dogfish fishery. The proposed action is not expected to significantly alter fishing methods or activities, and is not expected to significantly increase fishing effort or the spatial and/or temporal distribution of current fishing effort. The measures contained in this action are not expected to have highly uncertain, unique, or unknown risks on the human environment.

11) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

As discussed in Section 7.5, the proposed action is not expected to have cumulatively significant impacts when considered with the impacts from other fishing and non-fishing activities. The improvements in the condition of the stock are expected to generate cumulative positive impacts overall. The proposed action, together with past and future actions are not expected to result in significant cumulative impacts on the biological, physical, and human components of the environment.

12) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

Although there are shipwrecks present in areas where fishing occurs, including some registered on the National Register of Historic Places, vessels try to avoid fishing too close to wrecks due to the possible loss or entanglement of fishing gear. Therefore, it is not likely that the proposed action would adversely affect the historic resources.

13) Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

The proposed action addresses the commercial quota and trip limit for the spiny dogfish fishery. There is no evidence or indication that this fishery has ever resulted in the introduction or spread of nonindigenous species. The proposed action is not expected to significantly alter fishing methods or activities, and is not expected to significantly increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, it is highly unlikely that the proposed action would be expected to result in the introduction or spread of a non-indigenous species.

14) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?

The proposed action addresses the commercial quota and trip limit for the spiny dogfish fishery. The proposed action is not expected to significantly alter fishing methods or activities, and is not expected to significantly increase fishing effort or the spatial and/or temporal distribution of current fishing effort. When new stock assessment or other biological information about these species becomes available in the future, then the specifications may be adjusted according to the FMP. The proposed action will not result in significant effects, nor does it represent a decision in principle about a future consideration.

15) Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?

The proposed action addresses the commercial quota and trip limit for the spiny dogfish fishery. The proposed action is not expected to alter fishing methods or activities such that they threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment. The proposed action has been found to be consistent with other applicable laws (see Sections 9.2 - 9.10 below).

16) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

The impacts of the proposed action on the biological, physical, and human environment are described in Section 7.0. The cumulative effects of the proposed action on target and non-target species are detailed in Section 7.6. The proposed action is not expected to significantly increase fishing effort or the spatial and/or temporal distribution of current

fishing effort. The improvements in the condition of the stock through implementation of quotas based on the fishing mortality target contained in the FMP are expected to generate positive impacts overall.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting Environmental Assessment, it is hereby determined that the proposed actions in this specification package will not significantly impact the quality of the human environment as described above and in the Environmental Assessment. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an Environmental Impact Statement for this action is not necessary.

for John K. Bullard
Regional Administrator, Northeast Region, NMFS

4/16/13
Date

8.2 Marine Mammal Protection Act

The MAFMC has reviewed the impacts of the proposed spiny dogfish specifications on marine mammals and has concluded that the proposed management actions are consistent with the provisions of the MMPA, and will not alter existing measures to protect the species likely to inhabit the spiny dogfish management unit. For further information on the potential impacts of the fishery and the proposed management action on marine mammals, see Section 7.4 of this document.

8.3 Endangered Species Act

Section 7 of the Endangered Species Act requires federal agencies conducting, authorizing, or funding activities that affect threatened or endangered species to ensure that those effects do not jeopardize the continued existence of listed species. The MAFMC has concluded, using information available, that the proposed spiny dogfish specifications are not likely to jeopardize any ESA-listed species or alter or modify any critical habitat, based on the discussion of impacts in this document (Section 7.3).

8.4 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) of 1972, as amended, provides measures for ensuring stability of productive fishery habitat while striving to balance development pressures with social, economic, cultural, and other impacts on the coastal zone. It is recognized that responsible management of both coastal zones and fish stocks must involve mutually supportive goals. The Council has developed this specifications document and will submit it to NMFS; NMFS must determine whether this action is consistent to the maximum extent practicable with the CZM programs for each state (Maine through North Carolina).

8.5 Administrative Procedure Act

Sections 551-553 of the Federal Administrative Procedure Act establish procedural requirements applicable to informal rulemaking by federal agencies. The purpose is to ensure public access to the federal rulemaking process and to give the public notice and an opportunity to comment before the agency promulgates new regulations.

The Administrative Procedure Act requires solicitation and review of public comments on actions taken in the development of a fishery management plan and subsequent amendments and framework adjustments. Development of this specifications document provided many opportunities for public review, input, and access to the rulemaking process. This proposed specifications document was developed as a result of a multi-stage process that involved review of the source document (2013 - 2015 Specifications and Management Measures) by affected members of the public. The public had the opportunity to review and comment on management measures during a meeting of the Council's Scientific and Statistical Committee on September 26 and 27, 2012, a Spiny Dogfish MC Meeting on October 3, 2012, a Joint Spiny Dogfish Committee meeting held on October 17, 2012, a MAFMC meeting held October 17, 2012, and an NEFMC meeting held on November 14, 2012. In addition, the public will have further opportunity to comment on this specifications package once NMFS publishes a proposed rule in the Federal Register (FR) requesting comments.

8.6 Information Quality Act

Utility of Information Product

The proposed document includes: A description of the proposed specifications, description of the alternatives considered, and the reasons for selecting the proposed management measures. This action proposes commercial quotas and other management measures for spiny dogfish in 2011. This proposed specifications document implements the FMP's conservation and management goals consistent with the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) as well as all other existing applicable laws.

This proposed specifications document was developed as a result of a multi-stage process that involved review of the source document (2011 Specifications and Management Measures) by affected members of the public. The public had the opportunity to review and comment on management measures during a meeting of the Council's Scientific and Statistical Committee on September 26 and 27, 2012, a Spiny Dogfish MC Meeting on October 3, 2012, a Joint Spiny Dogfish Committee meeting held on October 17, 2012, a MAFMC meeting held October 17, 2012, and an NEFMC meeting held on November 14, 2012. In addition, the public will have further opportunity to comment on this specifications package once NMFS publishes a proposed rule in the Federal Register (FR) requesting comments.

The Federal Register notice that announces the proposed rule and the implementing regulations will be made available in printed publication and on the website for the

Northeast Regional Office. The notice provides metric conversions for all measurements.

Integrity of Information Product

The information product meets the standards for integrity under the following types of documents:

Other/Discussion (e.g., Confidentiality of Statistics of the Magnuson-Stevens Fishery Conservation and Management Act; NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics; 50 CFR 229.11, Confidentiality of information collected under the Marine Mammal Protection Act.)

Objectivity of Information Product

The category of information product that applies for this product is "Natural Resource Plans."

In preparing specifications documents, the Council must comply with the requirements of the Magnuson-Stevens Act, the National Environmental Policy Act, the Regulatory Flexibility Act, the Administrative Procedure Act, the Paperwork Reduction Act, the Coastal Zone Management Act, the Endangered Species Act, the Marine Mammal Protection Act, the Data Quality Act, and Executive Orders 12630 (Property Rights), 12866 (Regulatory Planning), 13132 (Federalism), and 13158 (Marine Protected Areas).

This specifications document has been developed to comply with all applicable National Standards, including National Standard 2. National Standard 2 states that the FMP's conservation and management measures shall be based upon the best scientific information available. Despite current data limitations, the conservation and management measures proposed to be implemented under this specifications document are based upon the best scientific information available. This information includes NMFS commercial fisheries data for fishing year 2011, which was used to characterize the economic impacts of the management proposals. These data, as well as the NMFS Observer program database, were used to characterize historic landings, species co-occurrence in the spiny dogfish catch, and discarding. The specialists who worked with these data are familiar with the most recent analytical techniques and with the available data and information relevant to the spiny dogfish fishery. Marine Recreational Fisheries Statistical Survey (MRFSS) data were used to characterize the recreational fishery for this species.

The policy choices (i.e., management measures) proposed to be implemented by this specifications document are supported by the available scientific information and, in cases where information was unavailable, proxy reference points are based on observed trends in survey data. The management measures contained in the specifications document are designed to meet the conservation goals and objectives of the FMP, and prevent overfishing and rebuild overfished resources, while maintaining sustainable levels of fishing effort to ensure a minimal impact on fishing communities.

The supporting materials and analyses used to develop the measures in the proposed rule are contained in the specifications document and to some degree in previous specifications and/or FMPs as specified in this document.

The review process for this specifications package involves the Mid-Atlantic Fishery Management Council, the Northeast Fisheries Science Center, the Northeast Regional Office, and NOAA Fisheries headquarters. The Center's technical review is conducted by senior level scientists with specialties in population dynamics, stock assessment methods, demersal resources, population biology, and the social sciences. The Council review process involves public meetings at which affected stakeholders have opportunity to provide comments on the specifications document. Review by staff at the Regional Office is conducted by those with expertise in fisheries management and policy, habitat conservation, protected species, and compliance with the applicable law. Final approval of the specifications document and clearance of the rule is conducted by staff at NOAA Fisheries Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

8.7 Paperwork Reduction Act

The Paperwork Reduction Act (PRA) concerns the collection of information. The intent of the PRA is to minimize the federal paperwork burden for individuals, small businesses, state and local governments, and other persons as well as to maximize the usefulness of information collected by the federal government. There are no changes to the existing reporting requirements previously approved under this FMP for vessel permits, dealer reporting, or vessel logbooks. This action does not contain a collection-of-information requirement for purposes of the Paperwork Reduction Act.

8.8 Impacts Relative to Federalism/E.O. 13132

This specifications document does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order (EO) 13132.

8.9 Regulatory Flexibility Act/E.O. 12866

8.9.1 Regulatory Impact Review (RIR) and Initial Regulatory Flexibility Analysis (IRFA)

This section provides the analysis and conclusions to address the requirements of Executive Order 12866 and the Regulatory Flexibility Act (RFA). Since many of the requirements of these mandates duplicate those required under the MSA and NEPA, this section contains references to other sections of this document. The following sections provide the basis for concluding that the proposed action is not significant under E.O. 12866 and will not have a significant economic impact on a substantial number of small entities under the RFA.

8.9.2 Description of Management Objectives

The goals and objectives of the management plan for the spiny dogfish resource are stated in Section 1.1.3 of the Spiny Dogfish FMP. The proposed action is consistent with, and does not modify those goals and objectives.

8.9.3 Description of the Fishery

Section 2.3 of the Spiny Dogfish FMP contains a detailed description of the historic spiny dogfish fishery. Updated fishery activity is given in Section 6.5 of this document.

8.9.4 Statement of the Problem

The purpose and need for this action is identified in Section 4.1 of this document. The Spiny Dogfish FMP requires that the Councils and the Regional Administrator review the best available stock and fishery data when developing specifications for the upcoming fishing year(s).

8.9.5 Description of the Alternatives

8.9.5.1 Fishing Year 2013 Quota and Trip Limit Alternatives

Alternative 1 (Preferred) – Set Quota at 40.842 M lb and Trip Limit at 4,000 lb)
For FY2013, specify a commercial quota of 40.842 M lb with trip limit of 4,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (23.648 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (17.194 M lb). Amendment 3 to the FMP will be implemented after the start of the 2013 fishing year and will eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota will be specified through the federal FMP.

In selecting this alternative, the Councils are recommending that the harvest limit (quota) be increased in keeping with the expansion of stock biomass, while also insuring that overfishing is prevented as identified by the SSC, and that management uncertainty is accounted for, as recommended by the Monitoring Committee. In addition, the increased trip limit (compared to is intended by the Councils to increase ex-vessel economic benefits to fishery participants. The quota recommended under this alternative also accommodates and minimizes conflict with interstate management by the ASMFC which adopted the coastwide quota identified in this alternative for state-jurisdictional waters.

Alternative 2 (Increase Quota but Maintain Status Quo Trip Limits) – Set Quota at 40.842 M lb and Trip Limit at 3,000 lb)
For FY2013, specify a commercial quota of 40.842 M lb with trip limit of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (23.648 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (17.194 M lb). Amendment 3 to the FMP will be

implemented after the start of the 2013 fishing year and will eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota will be specified through the federal FMP.

This Alternative differs from Alternative 1 only in terms of the recommended trip limit. Maintaining the status quo trip limit (3,000 lb) was considered by the Councils as possibly reducing the likelihood that the coastwide quota would be caught before the close of the fishing year. However, given the increase in quota, the Council chose not to maintain the lower trip limit. The quota recommended under this alternative does not conflict with interstate management by the ASMFC.

Alternative 3 (Maximum Quota, Increase Trip Limits) – Set Quota at 42.539 M lb and Trip Limit at 4,000 lb)
For FY2013, specify a commercial quota of 42.539 M lb with trip limit of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (24.630 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (17.909 M lb). Amendment 3 to the FMP will be implemented after the start of the 2013 fishing year and will eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota will be specified through the federal FMP.

This Alternative is associated with the least restrictive commercial quota in that a reduction, as made by the Monitoring Committee is not applied, such that ACT = ACL. The Council's accepted the Monitoring Committee's recommendations and did not endorse this alternative. The quota recommended under this alternative also conflicts with interstate management by the ASMFC which adopted a different coastwide quota for state-jurisdictional waters.

Alternative 4 (Maintain Status Quo Quota and Trip Limits) – Set Quota at 35.694 M lb and Trip Limit at 3,000 lb)
For FY2013, specify a commercial quota of 35.694 M lb with trip limit of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (20.667 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (15.027 M lb). Amendment 3 to the FMP will be implemented after the start of the 2013 fishing year and will eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota will be specified through the federal FMP.

Under this alternative, a more restrictive harvest limit (quota) would be implemented than is necessary to insure that overfishing is prevented in 2015 as identified by the SSC. Maintaining the status quo trip limit (3,000 lb) was considered by the Councils as possibly having a lower likelihood that the status quo coastwide quota would be caught before the close of the fishing year. The quota recommended under this alternative conflicts with interstate management by the ASMFC which adopted a different the coastwide quota.

8.9.5.2 Fishing Year 2014 Quota and Trip Limit Alternatives

Alternative 1 (Preferred) – Set Quota at 41.784 M lb and Trip Limit at 4,000 lb)
For FY2014, specify a commercial quota of 41.784 M lb with trip limit of 4,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (24.193 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (17.591 M lb). Amendment 3 to the FMP will be implemented after the start of the 2014 fishing year and will eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota will be specified through the federal FMP.

In selecting this alternative, the Councils are recommending that the harvest limit (quota) be increased in keeping with the expansion of stock biomass, while also insuring that overfishing is prevented as identified by the SSC, and that management uncertainty is accounted for, as recommended by the Monitoring Committee. In addition, the increased trip limit (compared to is intended by the Councils to increase ex-vessel economic benefits to fishery participants. The quota recommended under this alternative also accommodates and minimizes conflict with interstate management by the ASMFC which adopted the coastwide quota identified in this alternative for state-jurisdictional waters.

Alternative 2 (Increased Quota but Maintain Status Quo Trip Limits) – Set Quota at 41.784 M lb and Trip Limit at 3,000 lb)
For FY2014, specify a commercial quota of 41.784 M lb with trip limit of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (24.193 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (17.591 M lb). Amendment 3 to the FMP will be implemented after the start of the 2014 fishing year and will eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota will be specified through the federal FMP.

This Alternative differs from Alternative 1 only in terms of the recommended trip limit. Maintaining the status quo trip limit (3,000 lb) was considered by the Councils as possibly reducing the likelihood that the coastwide quota would be caught before the close of the fishing year. However, given the increase in quota, the Council chose not to maintain the lower trip limit. The quota recommended under this alternative does not conflict with interstate management by the ASMFC.

Alternative 3 (Maximum Quota, Increase Trip Limit) – Set Quota at 43.520 M lb and Trip Limit at 4,000 lb)
For FY2014, specify a commercial quota of 43.520 M lb with trip limit of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (25.198 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (18.322 M lb). Amendment 3 to the FMP will be implemented after the start of the 2014 fishing year and will eliminate the allocation of

the commercial quota by period. After the effective date for that amendment, only a coastwide quota will be specified through the federal FMP.

This Alternative is associated with the least restrictive commercial quota in that a reduction, as made by the Monitoring Committee is not applied, such that ACT = ACL. The Council's accepted the Monitoring Committee's recommendations and did not endorse this alternative. The quota recommended under this alternative also conflicts with interstate management by the ASMFC which adopted a different coastwide quota for state-jurisdictional waters.

Alternative 4 (Status Quo Quota and Trip Limit) – Set Quota at 35.694 M lb and Trip Limit at 3,000 lb)
For FY2014, specify a commercial quota of 35.694 M lb with trip limit of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (20.667 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (15.027 M lb). Amendment 3 to the FMP will be implemented after the start of the 2014 fishing year and will eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota will be specified through the federal FMP.

Under this alternative, a more restrictive harvest limit (quota) would be implemented than is necessary to insure that overfishing is prevented in 2015 as identified by the SSC. Maintaining the status quo trip limit (3,000 lb) was considered by the Councils as possibly having a lower likelihood that the status quo coastwide quota would be caught before the close of the fishing year. The quota recommended under this alternative conflicts with interstate management by the ASMFC which adopted a different the coastwide quota.

8.9.5.3 Fishing Year 2015 Quota and Trip Limit Alternatives

Alternative 1 (Preferred) – Set Quota at 41.578 M lb and Trip Limit at 4,000 lb)
For FY2015, specify a commercial quota of 41.578 M lb with trip limit of 4,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (24.074 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (17.504 M lb). Amendment 3 to the FMP will be implemented after the start of the 2014 fishing year and will eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota will be specified through the federal FMP.

In selecting this alternative, the Councils are recommending that the harvest limit (quota) be increased in keeping with the expansion of stock biomass, while also insuring that overfishing is prevented as identified by the SSC, and that management uncertainty is accounted for, as recommended by the Monitoring Committee. In addition, the increased trip limit (compared to is intended by the Councils to increase ex-vessel economic benefits to fishery participants. The quota recommended under this alternative also

accommodates and minimizes conflict with interstate management by the ASMFC which adopted the coastwide quota identified in this alternative for state-jurisdictional waters.

Alternative 2 (Increased Quota, Status Quo Trip Limit) – Set Quota at 41.578 M lb and Trip Limit at 3,000 lb)
For FY2015, specify a commercial quota of 41.578 M lb with trip limit of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (24.074 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (17.504 M lb) Amendment 3 to the FMP will be implemented after the start of the 2015 fishing year and will eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota will be specified through the federal FMP.

This Alternative differs from Alternative 1 only in terms of the recommended trip limit. Maintaining the status quo trip limit (3,000 lb) was considered by the Councils as possibly reducing the likelihood that the coastwide quota would be caught before the close of the fishing year. However, given the increase in quota, the Council chose not to maintain the lower trip limit. The quota recommended under this alternative does not conflict with interstate management by the ASMFC.

Alternative 3 (Maximum Quota, Increased Trip Limit) – Set Quota at 43.307 M lb and Trip Limit at 4,000 lb)
For FY2015, specify a commercial quota of 43.307 M lb with trip limit of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (25.074 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (18.232 M lb). Amendment 3 to the FMP will be implemented after the start of the 2015 fishing year and will eliminate the allocation of the commercial quota by period. After the effective date for that amendment, only a coastwide quota will be specified through the federal FMP.

This Alternative is associated with the least restrictive commercial quota in that a reduction, as made by the Monitoring Committee is not applied, such that ACT = ACL. The Council's accepted the Monitoring Committee's recommendations and did not endorse this alternative. The quota recommended under this alternative also conflicts with interstate management by the ASMFC which adopted a different coastwide quota for state-jurisdictional waters.

Alternative 4 (Status Quo Quota, Trip Limit) – Set Quota at 35.694 M lb and Trip Limit at 3,000 lb)
For FY2015, specify a commercial quota of 35.694 M lb with trip limit of 3,000 lb (vessels are prohibited from landing more than the specified amount in one calendar day). As per the FMP, the quota would be divided with quota Period 1 (May 1 through October 31) allocated 57.9% of the quota (20.667 M lb), and quota Period 2 (November 1 through April 30) allocated 42.1% of the quota (15.027 M lb). Amendment 3 to the FMP will be implemented after the start of the 2015 fishing year and will eliminate the allocation of

the commercial quota by period. After the effective date for that amendment, only a coastwide quota will be specified through the federal FMP.

Under this alternative, a more restrictive harvest limit (quota) would be implemented than is necessary to insure that overfishing is prevented in 2015 as identified by the SSC. Maintaining the status quo trip limit (3,000 lb) was considered by the Councils as possibly having a lower likelihood that the status quo coastwide quota would be caught before the close of the fishing year. The quota recommended under this alternative conflicts with interstate management by the ASMFC which adopted a different the coastwide quota.

8.9.5.4 RSA Alternatives

Alternative 1 (No Research Set-Asides/No-Action/*Status quo*)

Under this alternative, no RSA will be allowed for spiny dogfish in 2014 and 2015 and the commercial quotas would not be adjusted for the RSAs when established.

Alternative 2 (Preferred: Specify Research Set-Asides)

As recommended by the Council, this alternative would allow up to 3% of the 2014 and 2015 spiny dogfish landings to be set-aside in each year to fund projects selected under the Mid-Atlantic RSA Program. No action is being considered for the 2013 fishing year due to the timing of the RSA approval process. The project selection and award process for the 2014 Mid-Atlantic RSA Program has not yet been conducted and the selection and awards for 2015 will be done in 2014, therefore, the specific research quota awards are not known. Once the awards are finalized, NMFS will return any un-awarded set-aside amount to the commercial fishery either through each year's spiny dogfish specification rulemaking process or through the publication of a separate notice in the Federal Register notifying the public of a quota adjustment.

The MSA requires that interested parties be provided with an opportunity to comment on all proposed exempted fishing permits. Potential environmental impacts of this program on other MAFMC-managed fisheries (bluefish, summer flounder, scup, black sea bass, *Illex*, longfin, butterfish, and Atlantic mackerel) are addressed in those respective specification documents. Additional consultation and analysis with respect to NEPA, ESA, MSA, and other applicable law may be necessary if the statement of work changes or additional exemptions are requested.

8.9.6 Economic Analysis

The economic impacts of the proposed actions are discussed in Section 7.0 of this document. Higher quotas and constant or increased trip limits (Alternatives 1a/1b, 2 and 3) are expected to result in positive economic impacts by increasing or maintaining revenue from the dogfish fishery. In general, no significant economic impacts are expected because the alternatives are consistent with the goals of the FMP and are unlikely to result in significant deviation (negatively) from the status quo.

8.9.7 Determination of Significance under E.O. 12866

NMFS Guidelines provide criteria to be used to evaluate whether a proposed action is significant. A significant regulatory action means any regulatory action that is likely to result in a rule that may:

1. *Have an annual effect on the economy of $100 million or more, or adversely effect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or tribal governments or communities.*

The proposed action will not have an effect on the economy in excess of $100 million. The proposed action is not expected to have any adverse impacts on the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or state, local or tribal governments or communities.

2. *Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency.*

The proposed action will not create a serious inconsistency with, or otherwise interfere with, an action taken or planned by another agency. No other agency has indicated that it plans an action that will affect the spiny dogfish fishery in the EEZ.

3. *Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof.*

The proposed action will not materially alter the budgetary impact of entitlements, grants, user fees or loan programs, or the rights and obligations of their participants.

4. *Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.*

The proposed action does not raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in E.O. 12866.

8.9.8 Initial Regulatory Flexibility Analysis

The following sections contain analyses of the effect of the proposed action on small entities. Under Section 603(b) of the RFA, each initial regulatory flexibility analysis is required to address:

1. Reasons why the agency is considering the action,
2. The objectives and legal basis for the proposed rule,
3. The kind and number of small entities to which the proposed rule will apply,
4. The projected reporting, record-keeping and other compliance requirements of the proposed rule, and
5. All federal rules that may duplicate, overlap, or conflict with the proposed rule.

8.9.9 Reasons for Considering the Action

The purpose and need for this action is identified in Section 4.1 of this document. The Spiny Dogfish FMP requires that the Council and the Regional Administrator annually review the best available stock and fishery data when developing specifications for the upcoming fishing year.

8.9.10 Objectives and Legal Basis for the Action

The objective of the proposed action is to implement specifications for the spiny dogfish fishery, as required under the regulations implementing the Spiny Dogfish FMP, which are provided in 50 CFR 648, Subpart L.

8.9.11 Description and Number of Small Entities to Which the Rule Applies

All of the potentially affected businesses are considered small entities under the standards described in NOAA Fisheries guidelines because they have gross receipts that do not exceed $4 million annually. A discussion of vessel activity during the 2011 fishing year is given in Section 6.5.1 of this document.

8.9.12 Recordkeeping and Reporting Requirements

The proposed action does not introduce any new reporting, recordkeeping, or other compliance requirements.

8.9.13 Duplication, Overlap, or Conflict with Other Federal Rules

The proposed action does not duplicate, overlap or conflict with any other federal rules.

8.9.14 Economic Impacts on Small Entities

Section 7.0 of this document contains the economic analysis of the alternatives that were considered during the specification process.

10.0 LITERATURE CITED

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11.0 LIST OF AGENCIES AND PERSONS CONSULTED

This document was prepared by the Mid-Atlantic Fishery Management Council in consultation with the National Marine Fisheries Service and the New England Fishery Management Council.

Additional (final) copies of this EA can be obtained via the NMFS NERO website:
http://www.nero.noaa.gov/nero/regs/com2011.html
or by request from
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Bob Beal ASMFC
Dave Pierce NEFMC
Frank Blount NEFMC
David Preble NEFMC
John Quinn NEFMC

In addition, the following organizations/agencies were consulted during the development of the spiny dogfish specifications, either through direct communication/correspondence and/or participation in Council public meetings:

NOAA Fisheries, National Marine Fisheries Service, Northeast Regional Office, Gloucester MA
Northeast Fisheries Science Center, Woods Hole, MA
Atlantic States Marine Fisheries Commission

APPENDIX 1

Relevant Port and Community Descriptions

(The contents of this appendix are taken from the NEFSC's "Community Profiles for the Northeast US Fisheries" for Virginia Beach/Lynnhaven, VA; Hatteras, NC; Rye, NH; Chatham, MA; Ocean City, MD for which spiny dogfish comprised greater than 1% of total port ex-vessel revenue according to the federal dealer report database. They are also available on the internet at:
http://www.nefsc.noaa.gov/read/socialsci/community_profiles/)

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