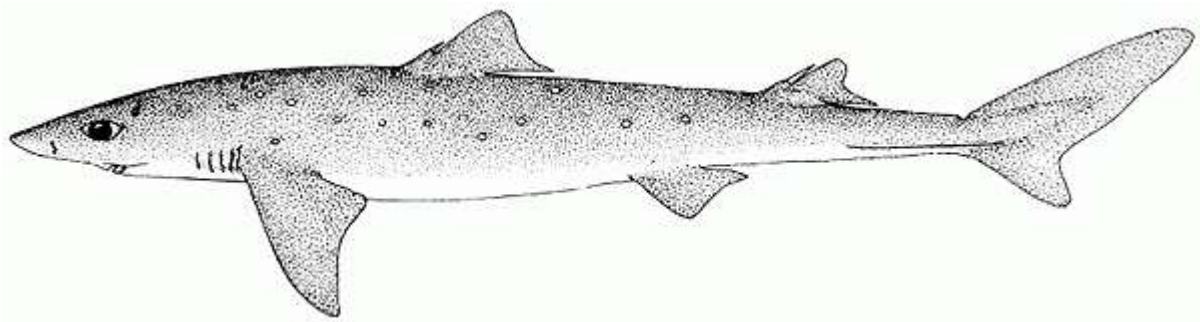


MSC CERTIFICATION

THE UNITED STATES ATLANTIC FISHERY FOR SPINY DOGFISH (*Squalus acanthias*)



Version 5

Public Certification Report

August 2012

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EXECUTIVE SUMMARY

An assessment team comprising Ian Scott (Lead Assessor & Expert Advisor P3), David Kulka (Expert Advisor P1) and Denis Rivard (Expert Advisor P2) undertook a main assessment of the United States Atlantic Fishery for Spiny Dogfish (*Squalus acanthias*) according to the Marine Stewardship Council (MSC) Principles and Criteria for Sustainable Fisheries.

The default assessment tree is used. There was an initial site visit in November / December, 2010. The scoring of the fishery was completed in Halifax in April, 2011. The draft report was sent to the client in July, 2011.

Due to a delay between the site visit and the publication of the Public Comment Draft Report on the MSC web site of more than 9 months, in October 2011 stakeholders were provided with the opportunity to send new comments on the assessment.

Based on a new submission by one stakeholder, together with the client response (that included a client action plan related to the drafted conditions to any certification) to the initial draft, the auditors revised version 1 of the report to prepare version 2 for the comment by peer reviewers. This was submitted to the clients for approval in November, 2011.

Version 2 of the report was revised by two peer reviewers in December, 2011 and January 2012. The comments and recommendations of the peer reviewers were revised by the team and changes were made to the draft (see appendix 2 for the team's responses) (February, 2012). Version 3 of the report was posted on the MSC web site for public comment on the 28 th February. A large number of comments were received (see appendix 4). The Final Report and Determination were posted on the MSC web site on the 17 th July; no objections were received to the determination.

Initially, twenty four units of certification (UoC) were considered in the main assessment; however subsequent to the site visit this number was reduced to six, covering the combined fishery in all state waters (with the exception of Connecticut, New York and Delaware that were not part of the initial scope of the assessment) rather than the fishery in state waters of the individual states.

The UoCs together with the scores for Principles 1, 2 and 3 and the total number of performance indicators (PIs) that scored less than 80 leading to the raising of conditions are:

Spiny Dogfish: US Federal Waters: Gill Net P1 = 84.4; P2 = 81.0; P3 = 91.3 (with 5 PIs < 80);
 Spiny Dogfish: US Federal Waters: Long Line P1 = 84.4; P2 = 81.3; P3 = 92.8 (with 3 PIs < 80);
 Spiny Dogfish: US Federal Waters: Trawler P1 = 84.4; P2 = 81.3; P3 = 92.8 (with 3 PIs < 80);
 Spiny Dogfish: State Waters: Gill Net P1 = 84.4; P2 = 81.0; P3 = 91.8 (with 5 PIs < 80);
 Spiny Dogfish: State Waters: Long Line P1 = 84.4; P2 = 81.3; P3 = 92.3 (with 3 PIs < 80); and
 Spiny Dogfish: State Waters: Trawler P1 = 84.4; P2 = 81.3; P3 = 92.3 (with 3 PIs < 80).

As all Units of Certification attained a score of 80 or more against each of the MSC Principles and no PI scored less than 60, it is determined that the United States Atlantic Fishery for Spiny Dogfish (*Squalus acanthias*) be certified according to the MSC Principles and Criteria for Sustainable Fisheries according to the following UoC.

Species/Stock	Area	Gear	Management System
Spiny Dogfish	US Federal Waters	Gill Net	NMFS / MAFMC / NEFMC
		Long Line	
		Trawl	
	State Waters: Maine, New Hampshire, Massachusetts, Rhode Island, New Jersey, Virginia, North Carolina	Gill Net	ASMFC
		Long Line	
		Trawl	

Conditions to certification are defined to improve the performance of those PIs which achieve a score of less than 80 to at least the 80 level within a defined period of time set by the certification body but no longer than the term of the certification (5 years). Part of the output of Annual Audits of certified fisheries is to check progress being made to respond to the conditions in the terms of the implementation of the client action plan (CAP).

Sixteen conditions have been raised on the certification. The client is required to address these in a CAP. These conditions are contained in section 13.7 of the report, together with the related CAP.

1 INTRODUCTION

1.1 Introduction

This report sets out the results of the assessment of the “The United States Atlantic Fishery for Spiny Dogfish (*Squalus acanthias*)” against the MSC Principles and Criteria for Sustainable Fishing. The client is the Sustainable Fisheries Association, Inc., a group of processors comprised of Seatrade International Company Inc., Zeus Packing Inc., Marder Trawling Inc. and Eastern Fisheries, Inc.

1.2 Fishery Proposed for Certification

MSC guidelines to certifiers define a unit of certification (UoC) as “*the fishery or fish stock (=biologically distinct unit) combined with the fishing method/gear and practice (=vessel(s) pursuing the fish of that stock).*”

The fishery under assessment is that for Spiny Dogfish (SD) in Federal and State waters within the United States EEZ. A total of six UoCs are considered:

Species/Stock	Area	Gear	Management System
Spiny Dogfish	US Federal Waters	Gill Net	NMFS / MAFMC / NEFMC
		Long Line	
		Trawl	
	State Waters: Maine, New Hampshire, Massachusetts, Rhode Island, New Jersey, Virginia, North Carolina	Gill Net	ASMFC
		Long Line	
		Trawl	

This represents a change from the initially proposed approach that would have treated the fishery in State waters by individual State. Subsequently, the UoCs were clarified to cover the fishery in State waters collectively. However as it is not possible to widen the scope of a certification after the process has begun, the collective UoC is limited to the originally nominated States i.e. the fisheries of Connecticut, New York and Delaware are not covered.

1.3 Report Structure and Assessment Process

The aim of this assessment is to determine the degree of compliance of the six fisheries against MSC Principles and Criteria for Sustainable Fishing.

The assessment is based on the MSC “*Fisheries Assessment Methodology and Guidance to Certification Bodies including Default Assessment Tree and Risk-Based Framework – Version 2*” dated 31st July, 2009 together with relevant MSC policy advisories.

This report contains:

- A background to the fisheries that provides stakeholders with the information used as a basis for the scoring commentary contained in Annex 1;
- A summary of the qualifications and experience of the audit team;
- A review of the principles and criteria that comprise the MSC standard;
- A summary of stakeholder consultation;
- A description of the methodology used to assess (“score”) the fishery against the MSC Standard;
- A summary of the results of the assessments together with the certification recommendation and any conditions attached to the certification;
- A “Scoring table” (Annex 1) with related commentary that analyses the fishery in relation to individual MSC performance indicators ; and
- Other annexes as noted below.

The certification process is progressed through a series of draft reports.

1. An initial draft for client review and comments (Version 1).
2. A second draft (Version 2) for peer review by nominated experts. The comments of the peer reviewers are contained in Annex 3 together with the responses of the certification team and a note of the amendments made to Version 2.
3. The Public Consultation Draft (Version 3) is released for public scrutiny on the MSC website. Stakeholders' comments are contained in Annex 4, together with the team's responses and a note of the amendments made to Version 3.
4. The Final Report (Version 4) provides the team's recommendation on certification for consideration by the Intertek Moody Marine Governing Board (a body independent of the assessment team). The Board makes the final certification determination on behalf of Intertek Moody Marine. Version 4 is posted on the MSC web site for stakeholder review.
5. The Public Certification Report (Version 5) is published on the MSC web site.

1.4 Information Sources Used

Information used in the main assessment has been obtained from two main sources:

1. Interviews and correspondence with stakeholders and responsible authorities. Specific information gained from these sources is attributed unless confidentiality was requested.
2. Published information and unpublished reports used during the assessment as listed below.

Ahab's Journal Spiny Dogfish still being considered for CITES listing - a really bad thing http://ahabsjournal.typepad.com/ahabs_journal/2009/07/from-nils-stolpe-spiny-Spiny_Dogfish-still-being-considered-for-cites-lisitng-a-really-bad-thing.html
ASFMC. Interstate Fisheries Management Program Charter
ASMFC 2002 Interstate Fishery Management Plan for Spiny Dogfish. Fishery Management Report No. 40 of the Atlantic States Marine Fisheries Commission. November 2002. 107 pages.
ASMFC 2004 Appeal Process
ASMFC 2006 Addendum 1 to the Spiny Dogfish FMP: Multiple-year specification of total allowable landings for Spiny Dogfish
ASMFC 2006. Review of the Atlantic States marine fisheries commission's interstate fishery management plan for Spiny Dogfish (<i>Squalus acanthias</i>). Prepared by the Spiny Dogfish Plan Review Team. Annual report.
ASMFC 2008 Five-Year Strategic Plan 2009-2013
ASMFC 2008 Species Profile: Spiny Dogfish: Stock Rebuilding Hinges on Robust Spawning Stock
ASMFC 2008. Addendum II To The Interstate Fishery Management Plan For Spiny Dogfish. A Publication of the Mid-Atlantic Fishery Management Council pursuant to National Oceanic and Atmospheric Administration Award No. NA57FC0002
ASMFC 2008. Framework Adjustment 2 To The Spiny Dogfish Fishery Management Plan (Includes Regulatory Impact Review and Initial Regulatory Flexibility Analysis). A Publication of the Mid-Atlantic Fishery Management Council pursuant to National Oceanic and Atmospheric Administration Award No. NA57FC0002
ASMFC 2010 Proceedings Of The Atlantic States Marine Fisheries Commission Spiny Dogfish Management Board
ASMFC 2010 2011 Action Plan
ASMFC 2010 ASMFC Sets Spiny Dogfish 2011/2012 Fishing Year Quota at 20 Million Pounds Atlantic States Marine Fisheries Commission NEWS RELEASE
ASMFC. 2008. Spiny Dogfish Technical Committee Report. Atlantic States Marine Fisheries Commission Technical Committee Meeting, Providence, RI. October 16, 2008. http://www.asmfc.org/speciesDocuments/Spiny_Dogfish/minutesandmeetings/technicalcommitt ee/oct08TCReport.pdf .
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Division of Marine Fisheries North Carolina. Strategic Plan
Ebert, D. A., White, W. T., Goldman, K. J., Compagno, L.J. V., Daly-Engel T. S. & Ward, R. D. 2010. Resurrection and redescription of <i>Squalus suckleyi</i> (Girard, 1854) from the North Pacific, with comments on the <i>Squalus acanthias</i> subgroup (Squaliformes: Squalidae). Zootaxa, 2612: 22-40.
Ebert, D. & Winton, M. 2010. Chondrichthyans of high latitude seas. Chapter 3 In: Carrier, J.C., J.A. Musick, and M.R. Heithaus (Eds.) The biology of sharks and their relatives, volume 2. Boca Raton, FL: CRC Press LLC.
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Federal Register / Vol. 74, No. 83 / Friday, May 1, 2009 2009 Specifications for the Spiny Dogfish Fishery http://frwebgate.access.gpo.gov/cgi-bin/multidb.cgi 05/09
Federal Register / Vol. 75, No. 121 / Thursday, June 24, 2010 / Rules and Regulations
Federal Register: March 19, 2009 (Volume 74, Number 52) Proposed 2009 Specifications for the Spiny Dogfish Fishery http://www.thefederalregister.com/d.p/2009-03-19-E9-6023 03/09
FishNet USA 2008. "Optimum Yield" in fisheries is far from optimum. FishNet USA, January 14, 2008 (http://www.fishnet-usa.com). 7 pages
Fordham S. Conservation and Management Status of Spiny Dogfish Sharks (<i>Squalus acanthias</i>)
Gulf of Maine Research Institute 2011 Responsibly Harvested Seafood from the Gulf of Maine Region Report on Gulf of Maine/Georges Bank Stock of Pollock
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Harbor Porpoise Take Reduction Program described in http://www.nero.noaa.gov/prot_res/porptrp/
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Higgins J. & G. Salvador. 2010. Guide to the Atlantic Large Whale Take reduction Plan – An Evolving plan to reduce the risk to North Atlantic large whales (right, humpback, and fin) posed by commercial trap/pot and gillnet fishing gear in the US Atlantic Ocean. National Oceanic and Atmospheric Administration. 70 pages.
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2 GLOSSARY OF ACRONYMS USED IN THE REPORT

ABC	Acceptable Biological Catch
ACFCMA	Atlantic Coastal Fisheries Cooperative Management Act
ACFHP	Atlantic Coastal Fish Habitat Partnership
ACL	Annual Catch Limit
ASCCSP	Atlantic Coastal Cooperative Statistics Program
ASFMC	Atlantic States Marine Fisheries Commission
BRP	Biological Reference Points
BT	Bottom Trawl
CEQ	Council on Environmental Quality
CITES	Convention on International Trade in Endangered Species
CPUE	catch per unit effort
CT	Connecticut
CZMA	Coastal Zone Management Act
DE	Delaware
DFO	Fisheries and Oceans, Canada
DMF	Division of Marine Fisheries (NC)
EA	Environmental Assessment
EEZ	Exclusive economic zone
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
ESA	Endangered Species Act
F	Fishing mortality
FL	Fork Length
FLA	Florida
FMP	Fisheries Management Plan
GA	Georgia
GN	Gill Net
ICNAF	International Convention of the Northwest Atlantic Fisheries
ISFMP	Inter State Fishery Management Plan
ITQ	Individual Transferable Quota
IUCN	International Union for Conservation of Nature
LL	Longline
M	Natural Mortality
MA	Massachusetts
MAMFC	Mid Atlantic Fisheries Management Council
ME	Maine
MMPA	Marine Mammal Protection Act
MRFSS	Marine Recreational Fishery Statistics Survey
MSA	Magnuson–Stevens Fishery Conservation and Management Act
MSC	Marine Stewardship Council
MSRA	Magnuson-Stevens Fishery Conservation and Management Reauthorization Act
MSY	Maximum Sustainable Yield
Mt	Metric tonnes
NAFO	Northwest Atlantic Fisheries Organization
NC	North Carolina
NEAFC	North East Atlantic Fisheries Commission
NEFSC	Northeast Fisheries Science Center
NEMFC	New England Fisheries Management Council
NEPA	National Environmental Policy Act

NH	New Hampshire
NJ	New Jersey
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NY	New York
OY	Optimal Yield
PBR	Potential Biological Removal
PDT	Plan Development Team
PRT	Plan Review Team
RI	Rhode Island
SARC	Stock Assessment Review Committee
SAW	Stock Assessment Workshop
SC	South Carolina
SD	Spiny dogfish
SDCSMB	Spiny Dogfish and Coastal Shark Management Board
SFA	Sustainable Fisheries Act
SSB	Spawning Stock Biomass
SSC	Scientific and Statistical Committee
TAC	Total Allowable Catch
TAL	Total Allowable Landings
TL	Total Length
TRAC	Transboundary Resources Assessment Committee
UoC	Unit of Certification
VA	Virginia
VTR	Vessel Trip Reports

3 BACKGROUND TO THE FISHERY

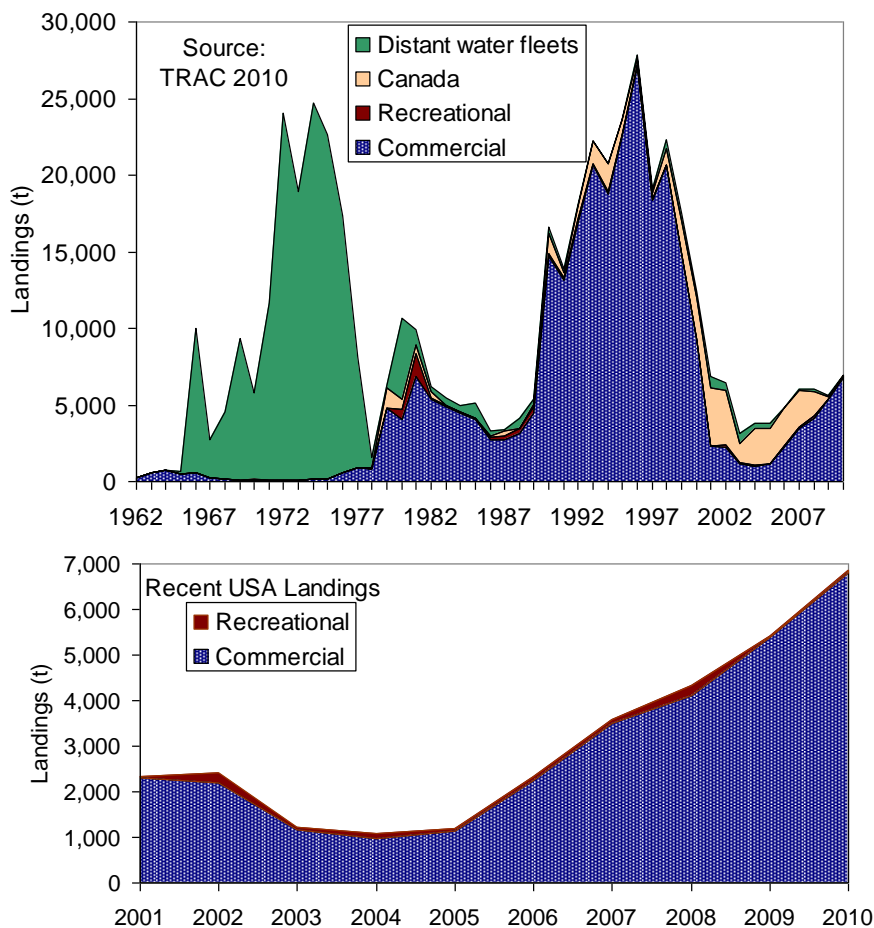
3.1 History of the Fishery

Records of SD landings from the NW Atlantic date back to the 1880s. During World War II, a limited US fishery was prosecuted primarily to obtain liver oil, until the synthesis of vitamin A reduced the need for SD livers (Templeman, 1944, Castro 1983).

Although SD was landed in Atlantic US by long liners and otter trawlers for many decades, due to limited commercial interest related to low domestic market demand, the average annual US harvest prior to 1960 was less than 100 mt. In the 1960s, the catch increased slightly and averaged 359 mt between 1962 and 1978.

From the mid-1960s, NW Atlantic catches of SD increased as distant water fleets targeting an array of groundfish expanded into the area off Canada and the US (Figure 1). SD catches, taken primarily by vessels of the former USSR, averaged 13,315 mt from 1966 to 1977, peaking at nearly 25,000 mt in 1974.

Figure 1: Landing of SD off North America



Note: Recreational landings were not recorded prior to 1980.

Source: TRAC 2010

The 1977 extension of fishery jurisdiction out to 200 miles brought a halt to fishing effort by foreign vessels in the USA EEZ. However, the US harvest of SD increased mainly due to a decline in groundfish stocks off the US which led the domestic fleet targeting alternative species. This development was encouraged by the opening of export markets for SD. A record 27,200 mt was

landed by US vessels in 1996 (the annual average over the period 1990 to 1998 was 18,000 mt) declining to 14,908 mt in 1999 as resource abundance reduced. A substantial portion of this take was from otter trawls although many gears contributed (see section on gear sectors).

Annual US recreational catches, monitored since 1980, have been less than 200 mt since 1990 and below 100 mt in most years (Trans-boundary Resources Assessment Committee (TRAC) 2010). The highest quantity (1,492 mt) was recorded in 1981, but from 1980 to date they have constituted only 2% of total US landings. From 1981 to 2009, 61% of the recreational catches originated in the area from NY to MA.

An additional factor was that foreign fishing effort had been directed at all sizes and both males and females and there were minimal discards. In contrast, due to export market demand being for larger fish, US commercial fishermen targeted mature females and this led to a high discard of smaller specimens. Consequently, the abundance of the adult female portion of the stock dramatically declined and NMFS designated SD as overfished in April, 1998. This action mandated the development of a fisheries management plan (FMP) with the introduction of measures to end overfishing and to rebuild the stock.

A joint FMP for Federal waters was developed by MAFMC and NEFMC and implemented in 2000. The objective was to halt large scale depletion of reproductively mature female SD and allow the stock to recover to a sustainable level. The recovery plan looked to constrain fishing mortality (F) on mature females at a rate (FREBUILD) that would grow the stock to 90 % of the nominal biomass target in five years (90 % of the 200,000 mt nominal target = 180,000 mt). This led to the demise of the directed fishery as an incidental catch quota (4 million lbs.) and low trip limits (initially 600 lbs. / 300 lbs. in the divided fishery year) were put in place. Subsequently, the biomass target was not approved by NMFS as the FMP was obliged to use the nominal target i.e. 200,000 mt.

As a short term action pending preparation of a FMP for State waters, in August 2000 the Spiny Dogfish and Coastal Shark Management Board (SDCSMB) of the ASMFC took emergency action to close state waters to the commercial harvest, landing and possession of SD when federal waters were closed due to the fishery landing its quota. Subsequently a State FMP was approved in 2002 that broadly followed the lead of the Federal FMP.

As a result of these measures, SD was only landed as a by-catch in other fisheries. Under quota management, US commercial plus recreational landings of SD ranged from 2,322 mt in 2001 to 1,087 mt in 2004 before increasing to 5,411 mt in 2009.

In 2004, due to population declines in several Northern Hemisphere stocks, the Shark Working Group established by the Convention on International Trade in Endangered Species (CITES) agreed that SD worldwide met the requirements for Appendix II listing.¹ SD in other parts of the world is in a depressed state, particularly in the northeast Atlantic. This is not now the case in the area fished by the USA. The proposal to include SD in appendix II failed to receive the required support at the 13th Conference of the Parties (CoP13) and subsequently at CoP 14 (2007) and CoP 15 (2010).

In 2006, SD in the NW Atlantic population was listed by the International Union for Conservation of Nature (IUCN) as Endangered. However, that assessment was based on data from the early 2000s when the U.S. SD stock was at a much lower level than at present. The report cites Northwest Atlantic SD biomass as decreasing. As shown by the analysis in this report this is not the case.

¹ Appendix II lists species that are not necessarily now threatened with extinction but that may become so unless trade is closely controlled. An Appendix-II listing does not necessarily restrict trade in the species, but where trade occurs it must be determined not to be detrimental to the survival of the species.

3.2 Biology of the Target Species

3.2.1 Family

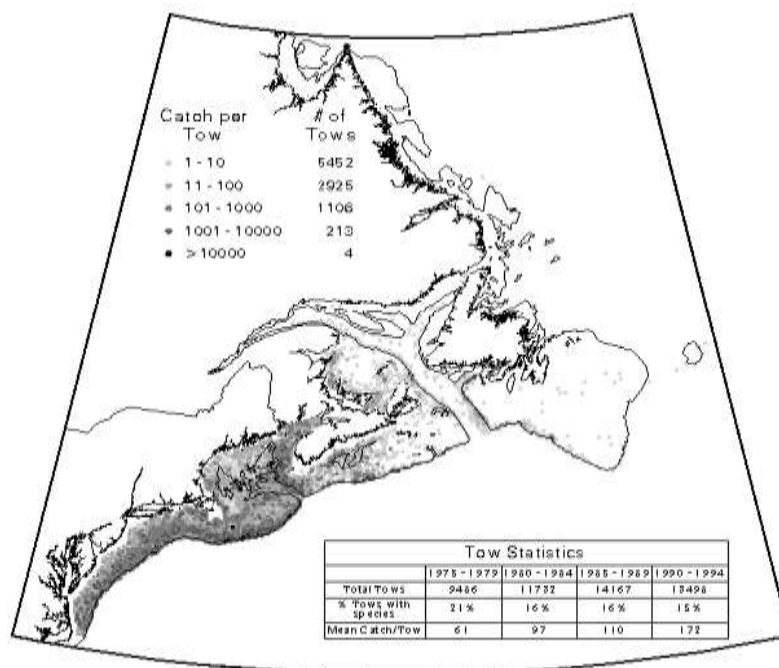
SD, also known as piked SD or spurdog (in the NE Atlantic), historically constituted two species *Squalus acanthias* (Linneaus 1758) in the S. Pacific and the Atlantic and *Squalus suckleyi* (Girard 1854) in the north Pacific. *S. suckleyi* was then placed in synonymy with *S. acanthias* (Hart 1979).

In recent years, the global genetic structure of SD was investigated and results indicated two major global clades; one encompassing the Atlantic and S. Pacific, the other in the N. Pacific (Hauser *et al.* 2007, Hauser 2009, Verissimo *et al.* 2010). These genetic differences correspond well with the different morphological characteristics observed between the two ocean basins (Ebert & Winton 2010). Long noted significantly different life history characteristics (faster growth, smaller age to maturity, a shorter lifespan and a smaller maximum size) differentiated Atlantic SD from N. Pacific SD (Campana *et al.* 2009, Ketchen 1975, McFarlane & King 2009, Saunders & McFarlane 1993). Consequently, N. Pacific SD has again been reclassified as a separate species, *Squalus suckleyi* (Ebert *et al.* 2010) with *S. acanthias* in the N. Atlantic.

3.2.2 Geographic Range

Atlantic SD is widespread throughout boreal and temperate continental shelf seas of the North Atlantic (Compagno 1984). In the NE Atlantic it inhabits most of the shelf waters off Europe from the Barents and White Seas west to Iceland, and south to N. Africa and the Mediterranean Sea. In the NW Atlantic, it is distributed from south Greenland and the Labrador Shelf to Florida although there it is largely concentrated within a relatively small portion of the range, between Nova Scotia (western Scotian Shelf/Bay of Fundy) and NC (Rago *et al.* 1996, Fig 2).

Figure 2: Distribution of SD in the W. Atlantic



Note: Darkest areas reflect higher abundance

Source: McMillan & Morse 1999

SD is the most abundant shark in the western N. Atlantic and is one of the most highly migratory species of demersal shark (Bigelow & Schroeder 1953). Templeman (1976) noted a trans-Atlantic record.

Within the NW Atlantic, there are several more or less well-defined “groups” of SD although a single genetic analysis in Canada’s Atlantic waters did not find evidence of population structuring based on

the loci used $F_{st} = 0.00845$ (McCauley *et al.* 2004). Campana *et al.* (2007, 2009) indicated that tagging data supports the view that there are several non-independent SD stock components. Some of these components remain largely separate and engage in seasonal onshore - offshore migrations in areas off Canada, in the southern Gulf of St Lawrence, around Newfoundland and on the eastern Scotian Shelf (Campana *et al.* 2007 2009, Templeman 1984).

3.2.3 Migration

Off the US, SD undergoes a large scale N / S migration not observed in the other areas. During spring and autumn, the species concentrates in coastal waters between NC and southern New England and show some degree of separation by sex. In summer, they migrate northward to the Gulf of Maine - Georges Bank region and return southward in autumn and winter (Jensen 1965). Locations of tag returns in recent experiments confirm this northward migration from overwintering NC waters during the spring, a summer period in New England, and a southward progression during the fall for overwintering off NC (TRAC Proceedings 2010).

3.2.4 Stock Mixing – U.S. / Canada

Tagging experiments indicate that there is limited mixing between the SW Scotian Shelf / Bay of Fundy off Canada and the Gulf of Maine off the U.S. Cross-border mixing was found to occur, but for only for an annual average of 10% of the population (Campana *et al.* 2007) which indicates the existence of two largely separate stocks delineated by the Canada/USA border. Over 90% of recaptured fish were caught in the country of release (TRAC Proceedings 2010). The stock in U.S. waters undergoes a north / south seasonal migration while the one in Canadian waters migrates seasonally inshore / offshore. Based on the most current finding that fish in US waters remain largely separate from those in Canadian waters it is considered appropriate to manage US fish as a separate entity if the U.S. resource assessment includes data on the Canadian stock (as it does).

Research continues to more precisely define the degree of mixing between Canadian and US waters. MAFMC indicated that there is a need to “conduct (further) tagging and genetic studies of SD in US and Canadian waters to clarify current assumptions about stock structure” as part of their five year research plan. The TRAC (2010) proceedings indicated that more detailed examination of time-at-large and the general patterns of fishing effort in the area of release are necessary before the tag recaptures data can be used to quantify movement flux among release areas. As well, the influence of fishing effort and reporting rates on recapture probabilities needs to be addressed. A more comprehensive, integrated modeling approach is also required to resolve uncertainties in movement rates.

As shown, there are differing opinions on whether there are one or two stocks of SD. The information presented at TRAC argued for two stocks with 10% exchange; Canadian scientists believe that there are stocks; if there are two stocks then it may be the case that the dividing line is further south than the international boundary. Nevertheless, US assessments take into account mortality in Canadian waters and the U.S. spring survey extends into that area. Accordingly, this accounts for mortality if there is one stock. The U.S. and Canada now do separate assessments as the TRAC approach did not yield results.

3.2.5 Schooling Behavior

SD school by size until maturity when they school by size and sex (Templeman 1944, Bigelow & Schroeder 1953, Saulson 1982, Nammack *et al.* 1985, Marques da Silva 1993; Rago *et al.* 1994). Schools are often composed of: very large, mature females; medium-sized individuals, either all mature males or all immature females; or small immature individuals of both sexes in equal numbers (Bigelow & Schroeder 1953). Schools of mature females are often found inshore and it is these that have largely been targeted by the fishery since the 1990s.

3.2.6 Habitat

In the NW Atlantic, SD are found in a wide range of bottom water temperatures, between 0°C and 17°C. However, 6°C - 15°C appear to be the preferred temperature (DFO 2007, Kulka 2006, McMillan & Morse 1999), while slightly warmer waters are found to the south. At the northern extent of the range, north of the Grand Banks, records are sporadic, probably due to year round temperatures being colder than the preferred range for SD. It also appears that the migrations undertaken may be in response to temperature, with SD avoiding colder conditions by moving offshore or south in the winter while also avoiding warm summer conditions off SC in the south.

The species has been collected near shore to as deep as 730 m, although it is most commonly observed at depths of 50 m - 200 m; generally deeper in the winter. Also, it tolerates a wide range of salinities including estuarine waters (Compagno 1984). Primarily epibenthic, and widely distributed, they are not known to associate with any particular bottom type or benthic habitat (McMillan & Morse 1999). They are also commonly observed throughout the water column, including being commonly observed at the surface.

3.2.7 Reproduction

SD mate mainly during the late fall and early winter (Ketchen 1986) but pregnant females are observed year round. Fertilization takes place internally and development is ovoviparous, where the embryos develop inside egg cases (referred to as candles) internally. The case breaks down about four to six months after fertilization and leaves the embryos with a yolk sac but without placental attachment to the uterine wall. The remaining 18 to 22 months of the gestation period is among the longest of any animal (Compagno 1984, Branstetter & Burgess 2002) before parturition of live young in the winter.

Females typically give birth once every two years. In Atlantic Canada, mature females were found to carry 1 to 14 embryos with a mode of five (Campana *et al.* 2007, 2009). This is consistent with an earlier study indicating a range from 2 to 15 pups, average of 6 (Soldat 1979).

Fecundity increases with length, such that a 90-cm fork length (FL) female had on average four times as many free embryos as a female with a 60-cm FL (Templeman 1944, Nammack *et al.* 1985, Campana *et al.* 2007). At birth during late winter, pups are typically 22 cm to 25 cm (Campana *et al.* 2007, 2009). Castro (1983) suggested that in the N. Atlantic SD pup offshore in deep-water wintering grounds, while Templeman (1944) speculated that mature females off Newfoundland pup inshore January through May. However, the reproductive cycle is not clearly understood and specific pupping grounds have not been delineated.

3.2.8 Growth

Growth is slow and sexually dimorphic with 50% maturity in females in the NW Atlantic being reached at a size of 82 cm TL (total length) and an age of 16 years; in contrast relative measures for males are 64 cm TL and 10 years (Campana *et al.* 2007). McMillan & Morse (1999) summarize estimates of SD length and age at 50% maturity from earlier studies. They agree in general with the results of Campana *et al.* (2007). The low reproductive capacity of SD contributes to one of the lowest population growth rates for any shark species. Females grow to a maximum size of 124 cm and are thought to live for 40 to 50 years; respective data for males is 100 cm and about 35 years.

3.2.9 Prey

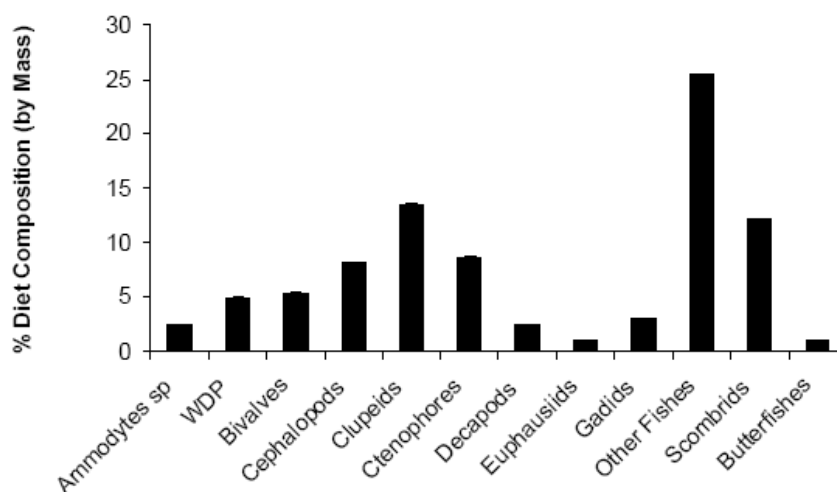
The common name "Spiny Dogfish" originated from fishermen who described these fish as chasing smaller fish in large dog-like "packs". McMillan & Morse (1999) stated that "*SD are well known for their voracious and opportunistic predatory behavior. Swimming in large packs, they will attack schools of fishes... including cod, haddock, capelin, mackerel, herring, and sand lance.*" Although SD are blamed for preying heavily on economically valuable groundfish, stomach content analyses indicate that groundfish comprise only a portion of their diets and the amount of groundfish removed by them is a small fraction of total fishery removal and stock sizes (Link *et al.* 2002).

Their opportunistic feeding behavior is supported by diet studies throughout their range showing a wide spectrum of prey, differing by area and related to what is locally available: flatfishes, blennies, sculpins, ctenophores, jellyfish, polychaetes, sipunculids, amphipods, shrimps, crabs, snails, octopods, squids, and sea cucumbers (Templeman 1944, Bigelow & Schroeder 1953, Jensen 1965, Branstetter & Burgess 2002). During inshore surveys in the early 1960s off SC, Atlantic menhaden, *Brevoortia tyrannus*, was the dominant fish collected in most of the trawls in which SD were taken. Many of the SD examined were gorged on juvenile menhaden (Bearden 1965).

On the Scotian Shelf, the two highly abundant species of zooplankton are the copepod, *Calanus finmarchicus*, and the euphausiid, *Meganyctiphanes norvegica*. Sameoto *et al* (1994) reported that stomachs of SD from trawls on the Scotian Shelf in 1989 contained these two species and there was no evidence that they were feeding on fish.

Fish, arthropods and ctenophores dominated the stomachs of SD off New England collected during the Northeast Fisheries Science Center (NEFSC) bottom trawl surveys from 1973 through 1990. Recent stomach analyses were presented at the 2010 TRAC. Based on > 55,000 stomachs collected over 30 years off the US, the diet of SD is characterized as feeding upon largely small pelagic fishes and mega-plankton (Figure 3).

Figure 3: Mean diet composition of SD off the US



Source: TRAC 2010.

3.2.10 Predators

Predation on SD in the Atlantic has been identified in other sharks (mackerel, great white, tiger, blue, and porbeagle), barndoor skate, lancetfish, swordfish, bluefin tuna, tilefish, goosefish, cod red hake, seals and killer whales (Scott & Scott 1988, Jensen 1965, Castro 1983, Compagno 1984).

3.3 Gear

A large number of gear types report the catch of SD¹. Historically, otter trawls and gill nets accounted for the major part of commercial landings with an approximate half share from 1988 to 1990. As the

¹ Otter Trawl, Bottom, Fish; Pots & Traps, Lobster, Inshore; Pots & Traps, Other; Gill nets, Other; Gill nets, Sink / Anchor, Other; Gill nets, Drift, Other; Lines Hand, Other; Lines Long, Reef Fish; Lines Trot with bait; Spears; Dredge clam; Dredge other and Diving outfits, Other.

fishery expanded, gill nets assumed a greater importance, while the use of long lines also increased. The demise of the directed fishery led to gill nets taking the major part of the catch.

3.3.1 Otter Trawls

As described by Stephenson *et al* “there is a wide range of otter trawl types used in the Northeast Region because of the diversity of fisheries prosecuted and bottom types encountered in the region. The specific gear design is often a result of the target species (e.g., whether they are found on or off the bottom) as well as the composition of the bottom (i.e., smooth versus rough and soft versus hard). Bottom otter trawls are used to catch a variety of species throughout the region and account for a higher proportion of the catch of federally managed species than any other gear type in the region. There are three components of the otter trawl that come in contact with the seafloor: the doors, the ground cables and bridles which attach the doors to the wings of the net, and the sweep which runs along the bottom of the net mouth. The footrope of the net is attached to the sweep. Bottom trawls are towed at a variety of speeds, but average about 5.6 km/hr (3 knots)” and “the raised-footrope trawl was designed especially for fishing for silver hake, red hake, and SD. It was designed to provide vessels with a means of continuing to fish for small mesh species without catching groundfish. Raised-footrope trawls can be rigged with or without a chain sweep. If no sweep is used, drop chains must be hung at defined intervals along the footrope. In trawls with a sweep, chains connect the sweep to the footrope. Both configurations are designed to make the trawl fish about 0.45-0.6 m (1.5-2 ft.) above the bottom. Although the doors of the trawl still ride on the bottom, underwater video and observations in flume tanks have confirmed that the sweep in the raised-footrope trawl has much less contact with the seafloor than does the traditional cookie sweep that it replaces”.

3.3.2 Gill Nets

Stephenson *et al* describe gill nets. “A gill net is a large wall of netting which may be set at or below the surface, on the seafloor, or at any depth between. They are equipped with floats at the top and lead weights along the bottom. Bottom gill nets are anchored or staked in position. Fish are caught as they try to pass through the net meshes. Gill nets are highly selective because the species and sizes of fish caught are highly dependent on the mesh size of the net. They are used to catch a wide range of species, including many federally managed species. Sink / Anchor Gill Nets have three components: lead line, netting, and float line. Lead lines used in New England are 30 kg (65 lb.) per net; lead lines used in the Mid-Atlantic are slightly heavier. The netting is monofilament nylon, and the mesh size varies depending on the target species. Nets are anchored at each end, using materials such as pieces of railroad track, sash weights, or Danforth anchors. Anchors and lead lines have the most contact with the bottom. Individual gill nets are typically 91 m (300 feet) long and 3.6 m (12 ft.) high. Strings of nets may be set out in straight lines, often across the current, or in various other configurations (e.g., circles), depending upon bottom and current conditions. Bottom gillnet fishing occurs in the Northeast Region in near shore coastal and estuarine waters as well as offshore on the continental shelf. In New England, bottom gill nets are fished in strings of 5-20 nets attached end to end. They are fished in two different ways, as “standup” and “tie down” nets. Standup nets are used to catch Atlantic cod, haddock, pollock, and hake and are soaked for 12-24 hr. Tie down nets are set with the float line tied to the lead line at 1.8-m (6-ft) intervals, so that the float line is close to the bottom, and the net forms a limp bag between each tie. They are left in the water for 3-4 days, and are used to catch flounders and goosefish (monkfish). Bottom gill nets in New England are set in relation to changes in bottom topography or bottom type where fish are expected to congregate. Other species caught in bottom gill nets in New England are SD, and skates. In the Mid-Atlantic, sink gill nets are fished singly or in strings of just 3-4 nets. The Mid-Atlantic fishery is more of a “strike” type fishery in which nets are set on schools of fish or around distinct bottom features and retrieved the same day, sometimes more than once. They catch species such as bluefish, Atlantic croaker, striped bass, spot, mullet, and smooth SD and skates. The use of sink gill nets in federal waters is managed under federal FMPs. The use of gill nets is restricted or prohibited in some state waters in the region”.

As reported in the State FMP, in Massachusetts “once SD schools are located, SD gill netters make snap sets with sink gill nets and usually retrieve their nets within an hour”. Also, in the NC Fishery “there were two different gill net fisheries, the anchored nets and the drop net fishery. The anchored gill nets are set in the late afternoon and usually retrieved the next day. Soak times for anchor nets were usually from 12 to 22 hours.... In the drop net fishery, schools of fish are located with sonar, then the nets are deployed over the school of fish and retrieved several hours later. Soak times for drop sets average only 3 hours. The nets are weighted to prevent drifting”.

3.3.3 Long lines

Stephenson *et al* note “A longline is a long length of line, often several miles long, to which short lengths of line (“gangions”) carrying baited hooks are attached. Long lining for bottom species on continental shelf areas and offshore banks is undertaken for a wide range of species. The two primary federally managed species caught with this gear in 2004 in the Northeast Region were golden tilefish and redfish. Bottom long lines are also referred to as “trot” lines and are used in the Mid-Atlantic States to harvest blue crabs. Bottom longline fishing in the Northeast Region is conducted with hand-baited gear that is stored in tubs (“tub trawls”) before the vessel goes fishing, and with vessels equipped with automated “snap-on” or “racking” systems. The gangions are 38 cm (15 in) long and 0.9-1.8 m (3-6 ft.) apart. The mainline, hooks, and gangions all contact the bottom. In the Cape Cod (Massachusetts) longline fishery, up to six individual long lines are strung together, for a total length of about 460 m (1,500 ft.), and are deployed with 9-11 kg (20-24 lb.) anchors. Each set consists of 600- 1,200 hooks. In tub trawls, the mainline is parachute cord; stainless steel wire and monofilament nylon gangions are used in snap-on systems. The gangions are snapped to the mainline as it pays off a drum, and removed and rebaited when the wire is hauled. In New England, long lines are usually set for only a few hours at a time in areas with attached benthic epifauna”.

As reported in the State FMP, in Massachusetts “Longline SD fishermen usually set up to 1,000 hooks in a string and retrieve their gear within one to two hours after they set”.

3.4 Landings

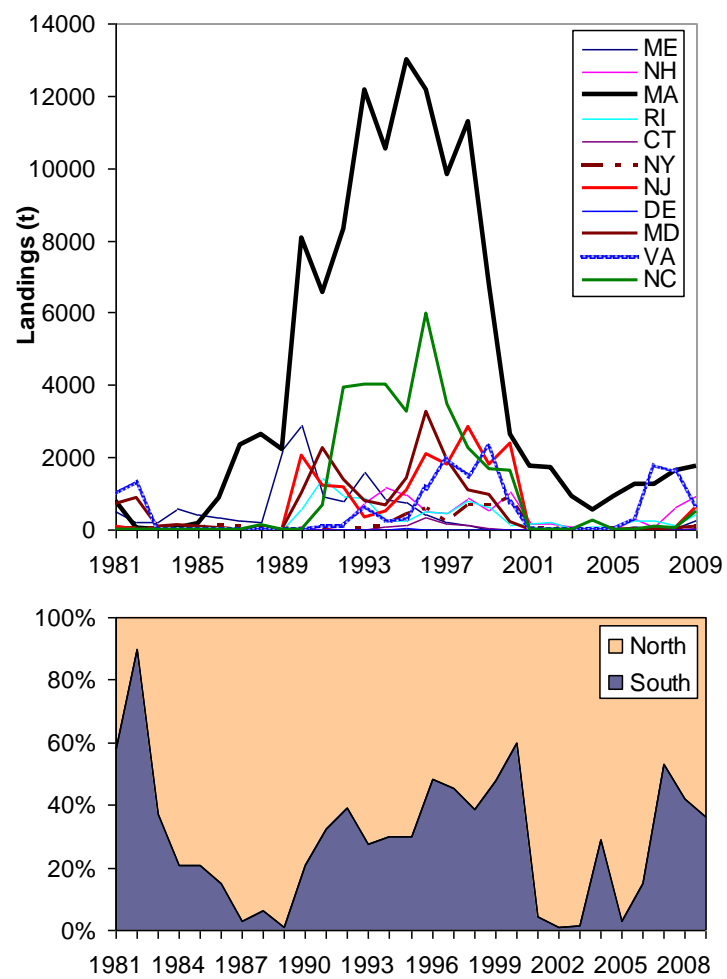
3.4.1 Landings by State

Since 1981, on average 90% of annual landings (> 94% in 2001) were made by the seven States (ME, NH, MA, RI, NJ, VA and NC) covered in the coastal fishery element of this assessment, with the remainder made by the remaining four eastern seaboard States reporting (Fig. 4). Ranking of recent (2005-2009) landings by State are: MA, VA, NH, RI, NC, NJ, ME, MD, NY, CT and DE. The top seven States in this ranking are UoC and 97% of landings originated from them. The majority of landings in most years since 1981 come from States north of NY (Fig. 4 lower panel), reflecting the significance of MA (average 58%, varying between 0.8% in 1983 and 87% in 2005) (Fig. 4 upper panel). NC averaged 11%, NJ and VA 6%, RI and MD, 5% (ASMFC 2006, 2008, TRAC 2010). Together, those six States landed 90% of the SD off USA since 1981. Of the States that have historically landed significant amounts of SD, only Maryland is not considered as part of the State UoC. Table 1 summarizes the catches of SD by State and by gear for 2009, the most recent complete year available. In 2009, 96% of the landings were taken from SD targeted fisheries, mainly in State waters.

3.4.2 Federal vs. State waters

Landings cannot be fully separated (except in the last two years) by where they were caught with respect to State (< 3 miles from land) vs. Federal (> 3 miles from land) waters, as fishers can hold both a State and a Federal permit at the same time. However, it is possible to approximate the split. From 1989-1993, when SD catches peaked, a larger proportion of SD landings (88 % to 95 %) were harvested in Federal waters, with this proportion reducing to between 50 % and 70% during the 1990s. From the mid-1990s, fishing effort increasingly shifted into State waters and this situation has been maintained so that vessels with State permits fishing near shore are the main source of SD catches. During 2007 and 2008, 74% of the total SD catch came from State waters.

Figure 4: US landings by State



Note: North is a composite of all States north of New York and South is all States from New York south.

Table 1: Commercial landings (mt) including estimates of discards of SD in 2009

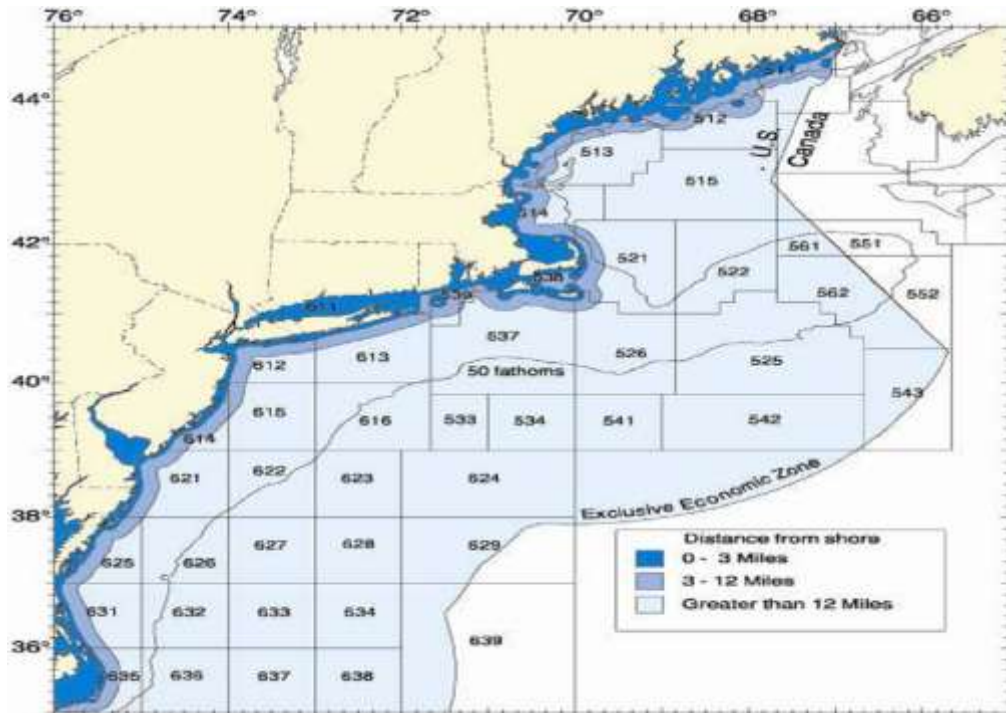
	SD Fishery*		Other Fisheries	
	Landings	Discards	Landings	Discards
Fed. Permit Holders – GN	2,284	715	300	1,718
Fed. Permit Holders – LL	251	3	15	240
Fed. Permit Holders – BT	771	111	61	516
	Directed fishery*	Other fisheries	Total	% Directed
ME – GN	224	35	259	86.5
ME – LL	0	0	0	-
ME – BT	10	Conf	10	100.0
NH – GN	768	Conf	768	100.0
NH – LL	Conf	0	0	0.0
NH – BT	68	Conf	68	100.0
MA – GN	828	33	861	96.2
MA – LL	48	48	96	50.4
MA – BT	106	9	115	91.9
RI – GN	189	Conf	189	100.0
RI – LL	Conf	Conf	0	-
RI – BT	160	13	173	92.7
NJ – GN	338	8	346	97.6
NJ – LL	25	Conf	25	100.0
NJ – BT	222	4	226	98.2
VA – GN	530	1	531	99.8
VA – LL	0	0	0	-
VA – BT	0	0	0	-
NC – GN	427	3	430	99.2
NC – LL	0	0	0	-
NC – BT	0	Conf	0	-

Note: Conf = Confidential

Source: Federal: 2009 Vessel Trip Reports. State: Dealer Reports - landings are by state, gear. The jurisdictional waters where harvest actually occurred are unknown.

The take from Federal waters is primarily as bycatch and is discarded. In the 1990s, statistical areas 537 (off southern MA) and 621 (off DE) constituted most of the catch (Figure 5). In 2005, area 514 (off northern MA) with a 46 % share was the most important area fished, followed by 521 (23 %, mid-MA), 513 (13 %, off ME and NH) and 611 (5 %, off NY and NJ).

Figure 5: Map of statistical areas off the US eastern seaboard



Source: NMFS

3.4.3 Annual Landings against Quota

Prior to 2009 when the regulations were tightened up with reporting more immediate, it was normal for the annual quota to be overfished. However, since 2009 this has not been the case. In fishing year 2009/10, landings were 11.39 million pounds compared to the quota of 12 million pounds; respective figures for fishing years 2010/11 and 2011/12 were 14.16 million pounds and 15 million pounds; and 20.06 million pounds and 20 million pounds.

The document Federal Register Volume 76, Number 189¹ specifically responds to the need to prevent overfishing of quota in Sec. 648.233 “*Spiny dogfish Accountability Measures (AMs): (a) Commercial EEZ closure. The Regional Administrator shall determine the date by which the quota for each semi-annual period described in Sec. 648.232(e)(1) will be harvested and shall close the EEZ to fishing for spiny dogfish on that date for the remainder of that semi-annual period by publishing notification in the Federal Register. Upon the closure date, and for the remainder of the semi-annual quota period, no vessel may fish for or possess spiny dogfish in the EEZ, nor may vessels issued a spiny dogfish permit under this part land spiny dogfish, nor may dealers issued a Federal permit purchase spiny dogfish from vessels issued a spiny dogfish permit under this part.*(b) *ACL overage evaluation. The ACL will be evaluated based on a single-year examination of total catch (including both landings and dead discards) to determine if the ACL has been exceeded.*(c)

¹ Thursday, September 29, 2011 (<http://www.gpo.gov/fdsys/pkg/FR-2011-09-29/html/2011-24511.htm>)

Overage repayment. In the event that the ACL has been exceeded in a given fishing year, the exact amount in pounds by which the ACL was exceeded shall be deducted, as soon as possible from a subsequent single fishing year ACL”.

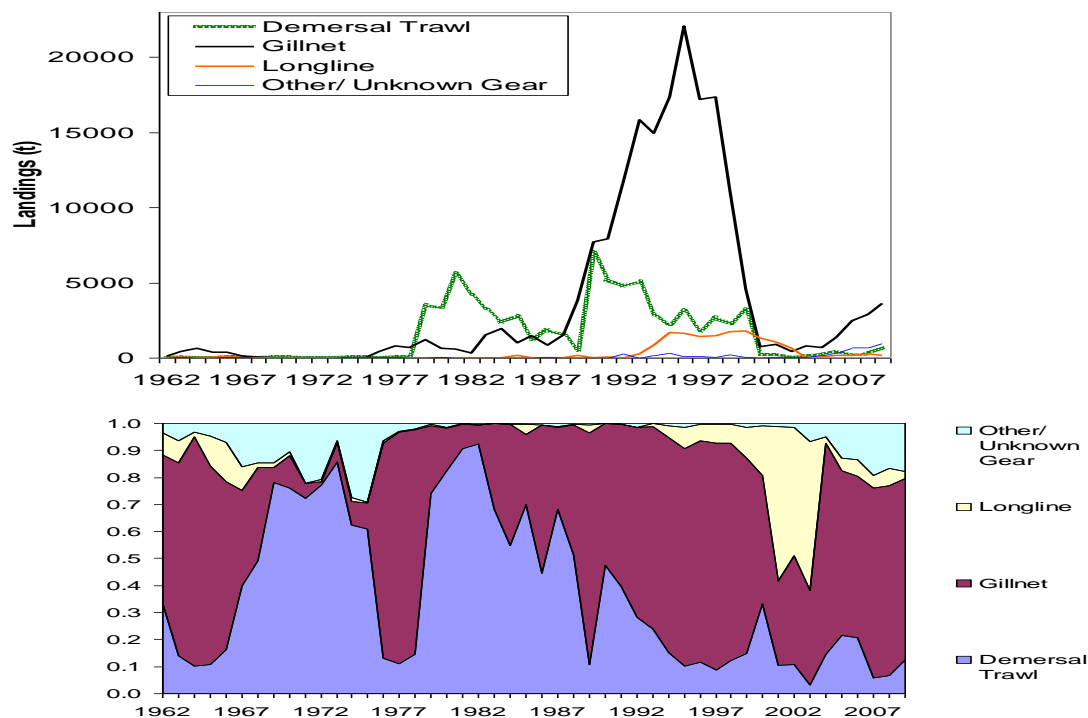
3.4.4 Landings by Country

Prior to 1979, Canadian landings were insignificant. There was no reported catch in many years. Since then, annual Canadian landings have fluctuated. They increased from an average of 500 mt from 1979-1989 to 1,820 mt in 1994. Thereafter there was a decline to 400 mt in 1996 and 1997; an increase to 3,584 mt in 2002; and then a drop to 113 mt in 2009, and just 6 mt in 2010.¹ Since 1980, Canadian landings have constituted an average of 6% (0 - 48.5% range) of total NW Atlantic reported landings.

3.4.5 Landings by gear

Any licensed fishing vessel can obtain a Federal SD permit and fish SD as long as there is quota available. Thus, the composition of the catching fleet changes according to the nature of permit applications. Historically, the primary gears used by US fishermen to catch SD were demersal otter trawls and sink gill nets. The latter accounted for over 50% of the total US landings during the 1960s; the former was the predominant gear through the 1970s and into the early 1980s (TRAC 2010 Proceedings). During the peak period of exploitation in the 1990s, sink gill nets were the dominant gear (Figure 6).

Figure 6: US landings (mt) by gear



Note: Lower panel shows proportion attributable to each gear.

Source: MAFMC

¹ <http://www.dfo-mpo.gc.ca/stats/commercial/land-debarq/sea-maritimes/s2010aq-eng.htm>

Since the introduction of the FMPs, most of the landings have been primarily attributable to the fixed gear fleet deploying gillnets and, to a less degree, long lines (generally, the same fixed gear vessels that can deploy several types of gear) fishing within State waters. The greatest amount of SD is taken in mixed gillnet fisheries in sets targeting mature females. In 2009, 67% of the landings were attributed to gillnets, 12% from trawls and 3% from long lines. In addition, 18% of landings were recorded as “other/unknown”, a non-specific category that has increased since 2003; previously it had been < 2%. NEAFC staff commented that in 2004 there was a change in reporting method that affected the integrity of differentiating origin of landings in regard to gear used.

Since the change there has been an issue with matching vessel trip reports (VTR) and landings records. Prior to 2004, port agents did not record gear but when mandatory electronic reporting by dealers was implemented gear had to be recorded. Vessels are required to record gear on VTRs.

There is, however, never a 100% match between the two statistical sources, due to a variety of factors (incorrect dates, missing VTRs, incorrect identifications). Thus, the increased proportion of “other/unknown” in the gear based landing records is primarily a reporting issue and a significant portion of the “unknown” landings is likely to be from gillnets, trawls or long lines rather than “other” types of gear.

3.4.6 Discards

SD is caught as bycatch in a large number of fisheries in the NE US, but discarding is high because their commercial value is low compared to other species of groundfish taken in mixed fisheries and also because smaller SD is unmarketable.

The assessment of SD in the US now includes an estimate of discards as part of the total removals from the population. Discard estimates used in the TRAC 2010 assessment (Table 2) are based on the methodology described in Rago *et al.* (2005) and Wigley *et al.* (2007). It relies on a discard/kept ratio from fishery observer data where the kept component is defined as the total landings of all species within a “fishery”. A fishery is defined as a homogeneous group of vessels with respect to gear type (longline, otter trawl, shrimp trawl, sink gill net, and scallop dredge), quarter and area fished.

Table 2: Estimated discard rate of SD by gear & country (%)

Gear	Canada	US
Gillnet	0.55	0.3
Line Trawl		0.1
Longline	0.1	0.25
Midwater Trawl	-	0.5
Otter Trawl	0.25 >200 kg 0 <200 kg	0.5
Pair Trawl	-	0.5
Purse Seine	0.25	0.5
Scallop Dredge	-	0.75
Scallop Trawl	-	0.5
Shrimp Trawl	-	0.5

Note: For Canada Otter Trawl, > or < 200 kg refers to when individual catches are > or < 200 kg.

Source: TRAC

Estimated annual commercial discards from 1989 to 2005 ranged from 7,400 mt to 47,300 mt (NEFSC 2006). However, it has been determined that SD is hardy and not all die when discarded after capture; a portion of the discards are thought to survive. Thus only dead discards are considered as part of fishing mortality. Table 3 shows the proportions of discards that are assumed to be dead and thus are included as part of fishing mortality.

Table 3: Post-discard mortality rates estimated for SD by gear & country (%)

Gear	Canada	US
Longline	0.10	0.10
Otter trawl	0.25	0.50
Gillnet	0.55	0.30
Recreational	0.25	0.20
Foreign	0.25	NA

Source: TRAC

Estimated dead discards decreased from an average of 22,000 mt in the early 1980s to 5,473 mt from 2000 (Figure 7). The majority, 83%, are attributable to otter trawls, with 13.3% related to sink gillnets. Discard rates are higher from otter trawl gear because a greater proportion of small, unmarketable, fish are taken in that gear and the target species are of higher value.

The recreational fishery also discards SD and estimates of annual dead SD discards from that fishery have ranged between 100 mt and 300 mt during the last two decades. The current commercial fishery, which is regulated by trip limits and an overall quota, discards all sizes and both sexes of SD (NEFSC 2006).

The annual amount of females discarded has declined from around 21,000 mt in the mid-1990s to around 4,000 mt (Figure 8), a level which has remained relatively stable in the 2000s. Discards of males declined as well but to a lesser extent and the estimated actual quantity is about 1,000 mt.

Figure 7: Annual estimates of dead discards by gear in the US commercial SD fishery

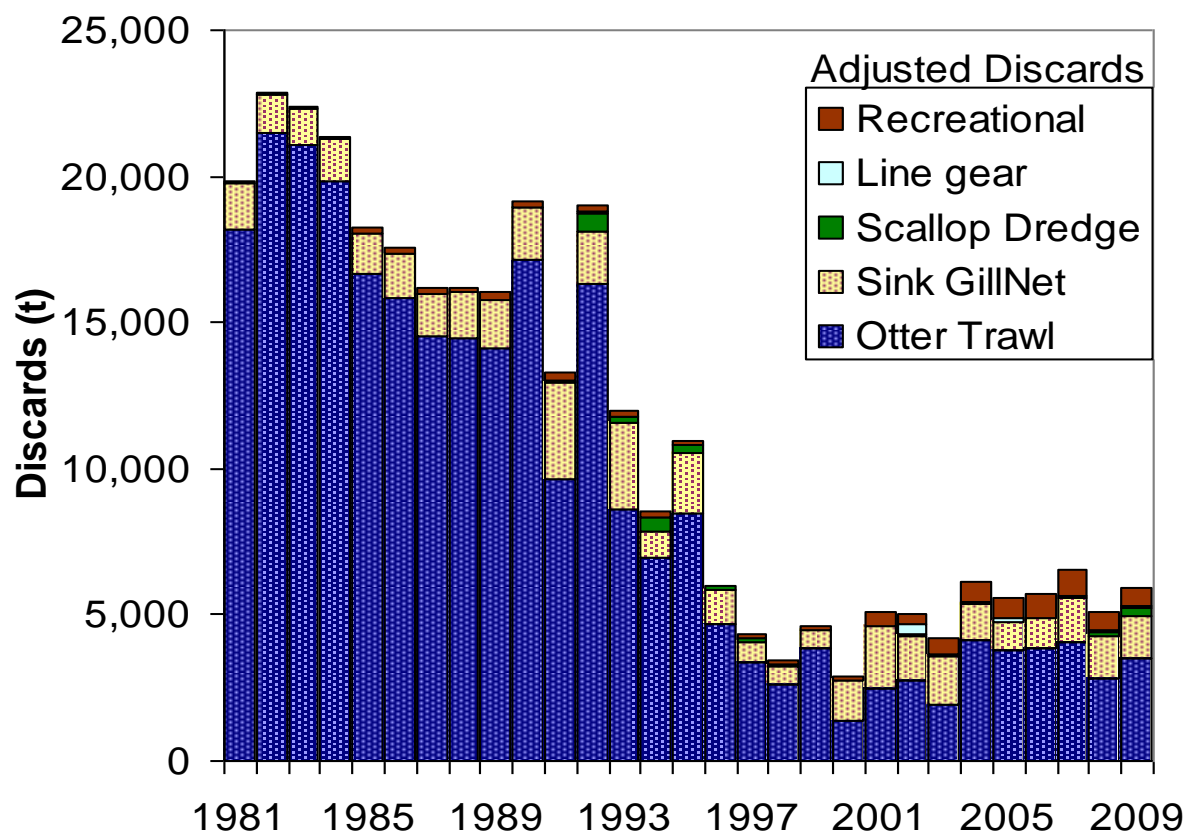
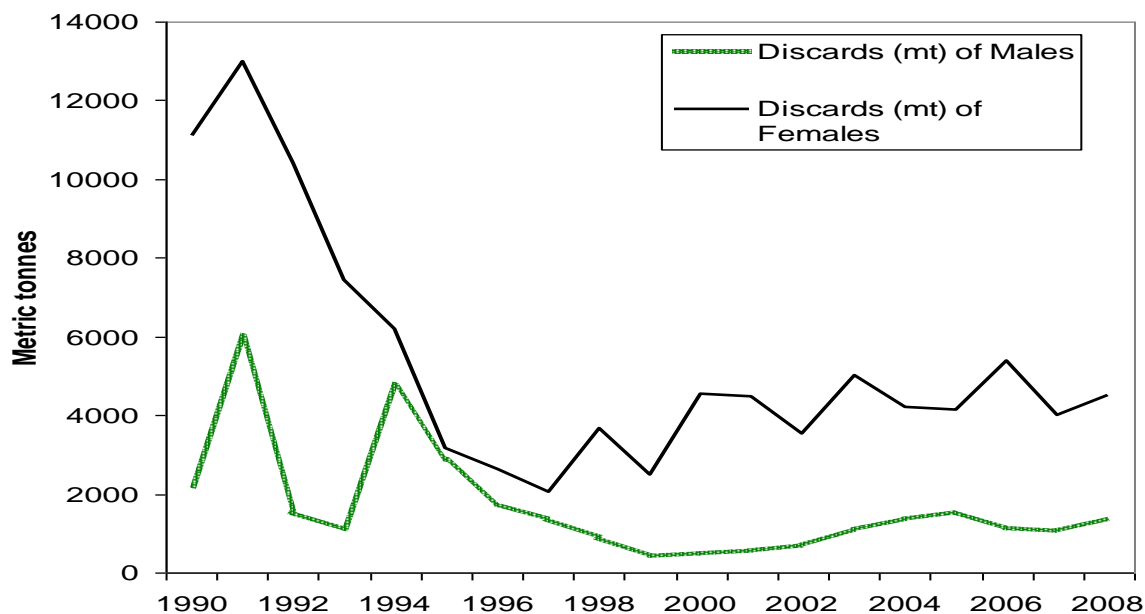


Figure 8: Discards of males and females in the commercial fishery



The discarded component of total removals was estimated to be as high as 80% during the 1980s when a larger portion of the catch was attributable to otter trawls (Figure 9). In that fishery, SD constitutes unwanted bycatch. The proportion discarded declined to <20% in the late-1990s-early 2000s but has increased again to an average of 52% since 2001.

Figure 10 breaks out the landings by sex in relation to discards.

Figure 9: Total removals of SD including estimates of dead discards and % discarded

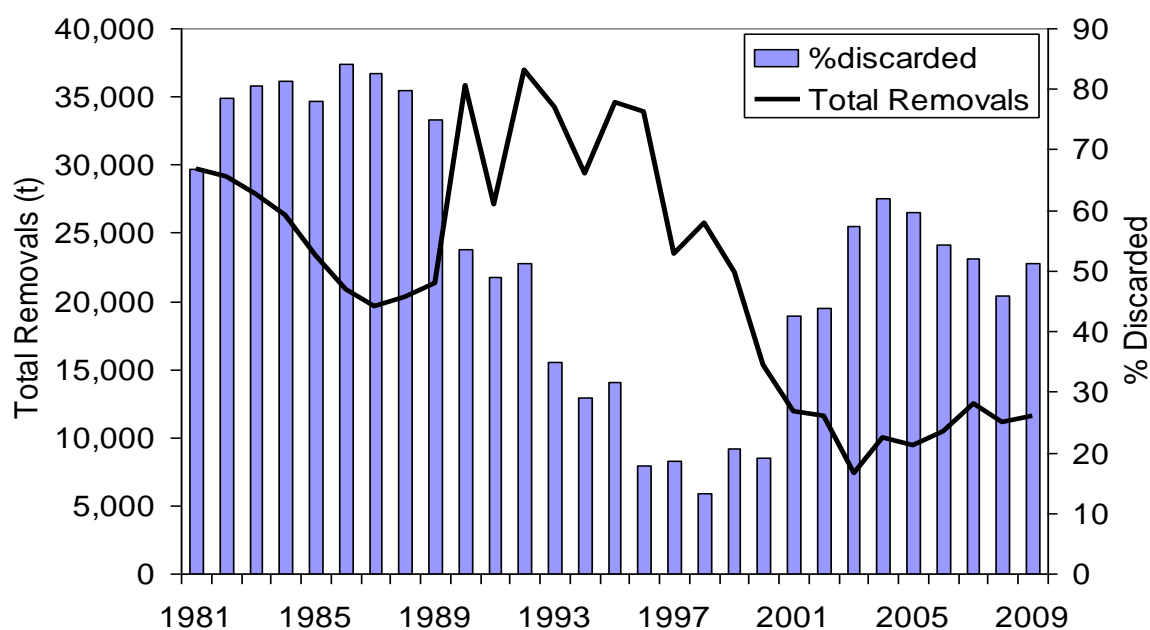
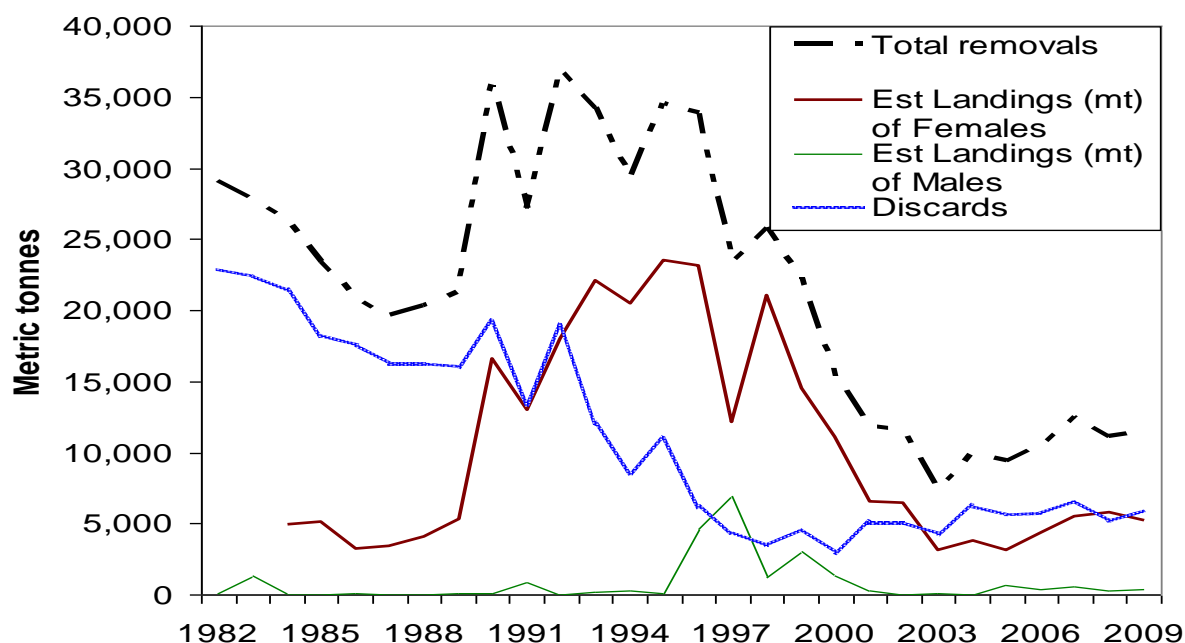


Figure 10: Landings by sex and discards



Landings of females increased in the 1980s and 1990s while landings of males decreased. Prior to 1990, a greater proportion of males were landed, but over most of the 1990s the situation reversed. From 2003, an equal amount of each sex has been landed indicating less selection by sex than in the past.

3.4.7 Total Fishery Removals

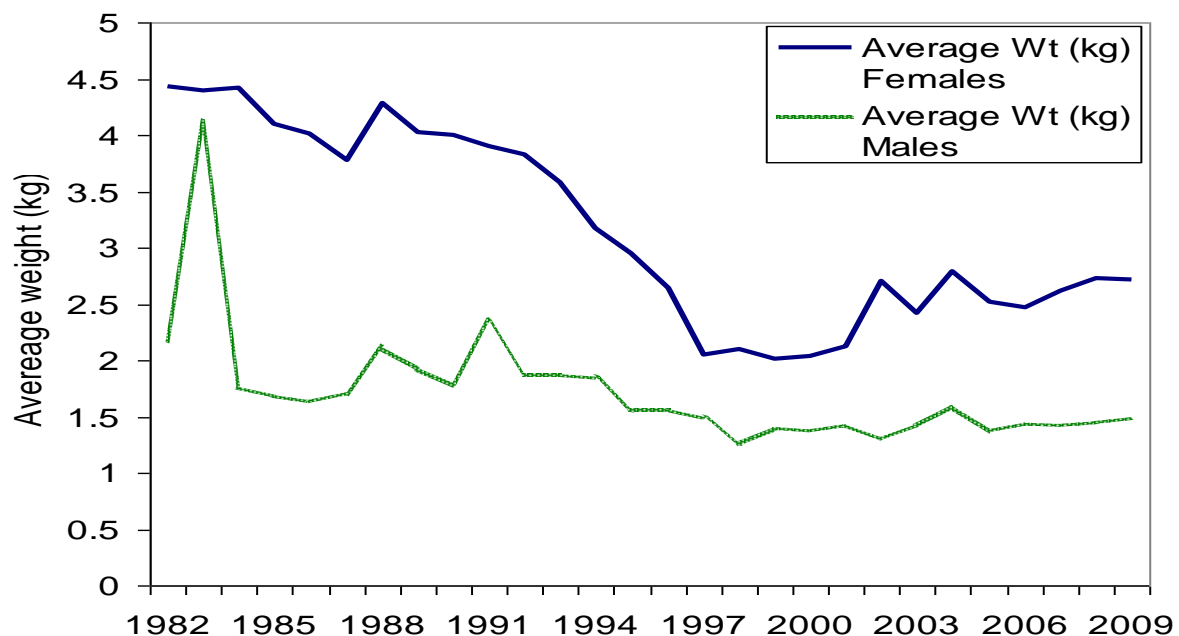
In summary, since 1981, total removals (landings plus dead discards) from the NW Atlantic peaked at 35,000 mt in the mid-1990s, but declined to 10,000 to 15,000 mt in the 2000s due to the management measurements introduced. The US took 72% of the total NW Atlantic SD removals (11,113 mt) in 2008 and 97% (11,504 mt) in 2009. In 2010 it was > 99%.

3.4.8 Fish Size

To meet processing and marketing requirements, the US fishery for SD targets large individuals (larger than 2.3 kg in weight, and 83 cm in length), which are primarily mature females. The median length of landed female SD averaged about 94 cm from 1982 to 1988 but declined to about 84 cm between 1989 and 1999. In terms of the average weight of females taken in the commercial fishery, weight declined from about 4 kg to 4.5 kg in the 1980s to about 2.3 kg in the late 1990s (Figure 11). Size has since increased to about 2.6 kg.

Males comprised a small fraction of the landings and were rarely observed above 90 cm in length (NEFSC 1994; NEFSC 1998; Rago *et al.* 1998, Rago *et al.* 2006). Average weights of males taken declined as well but to a lesser degree.

Figure 11: Average weight of females and males taken in the commercial fishery



Samples of individual weights from the recreational fishery show that the average weight of SD in the recreational catch seems to have declined. A value of 2.5 kg was previously used and new data suggest that using the existing biological data, grouped by years, is maybe a better way of estimating catch. It is not clear if this is a biological effect, but it is known that in the 1990s there were more big females closer to shore where the recreational fishery takes place and this could explain the change.

3.4.9 Seasonality

The temporal and spatial patterns of SD landings are closely tied to the north-south migration patterns of the stock. The SD commercial fishery operates from May 1 to April 30. SD is landed in most months of the year (Table 4) and over a wide area with the distribution of landings varying by area and season. During the fall and winter months, SD is harvested principally southward from NJ to NC. During spring and summer months, they are landed mainly in northern waters from ME to NY. In recent years, this seasonal difference in availability off individual States associated with the State FMP approach to allocating quota on a seasonal basis (as opposed to an allocation by State or group of States) has led to limited opportunities for the more southerly States to fish as the quota was taken before the southerly migration.

Table 4: SD Landings (%) by Month 2007 / 08

Month	%	Month	%
May	8.1	November	1.8
June	11.4	December	20.6
July	14.0	January	17.3
August	1.1	February	0.0
September	23.8	March	---
October	1.8	April	---
Total ('000 lbs.)	4,094.8	Total ('000 lbs.)	2,699.9

--- less than 0.05 %

Source: MAFMC 2009

Another factor in reducing effort in the more southerly States is the location of processing factories in the north (New Bedford, Gloucester and Portsmouth) with the limited catch potential precluding economically viable transport of raw material from southern landing ports. With the recent shift to allocation by group of States, allied with an increased catch limit (see below), this situation and consequently the overall seasonality of the catch may change.

3.5 The Market

Unlike many other species, SD are not filleted. The belly flaps are cut out, the fins removed and the body is skinned leaving a white loin or "back". The belly flaps are exported to Germany where they are smoked and sold as a delicacy. The fins are frozen and exported to the Orient where they are used in Asian cuisine. The backs are wrapped and frozen either individually or in blocks for export to England for sale in fish and chips shops as "rock salmon" and to European countries under local names and recipes. Oil from SD livers can be used in the nutraceutical industry as a source of omega 3 fatty acids and the remaining offal from processors is converted into dried meal or liquid fertilizer.

4 STOCK ASSESSMENT

4.1 Stock

While SD in U.S. waters are considered to probably comprise a single stock largely separate from SD in Canadian waters (see above) the U.S. assessment takes into account Canadian data. For management purposes in US waters the management of the stock is divided in two (coastal waters under the jurisdiction of States and the area from 3 miles out to 200 miles), in biological terms it is the same stock. However, whether SD over the entire NW Atlantic range constitutes a single biological unit (stock) is unclear. The 2010 TRAC states “SD in US and Canadian waters (NAFO Subareas 2-6) are not genetically distinct, but spatial structuring of the population is evident. Available evidence supports a conceptual model with resident components in the northern part of the range (off Canada), overlaid by a migratory, transboundary component. Seasonal migrations are pronounced throughout the range; these movements are primarily north-south in US waters and inshore - offshore in Canadian waters. The seasonal north-south migration extends into portions of Canadian waters each spring/summer, with return movements during autumn/winter. Most of the population biomass occurs in US waters”.

The US SD FMP states “the management unit for the SD Management Plan is defined as the range of the SD resource within the USA waters of the Northwest Atlantic Ocean” which includes all waters from Florida to the Canadian border off Maine. The 2010 TRAC Proceedings stated that the most important result from recent tagging studies is that over 90% of recaptured fish that were tagged in US or Canadian waters were caught in the country of release. These findings on fish movement across the international border suggest that managing the US component of the stock as a unit is appropriate”.

4.2 Background

Since 1985, the Northeast Regional Stock Assessment Review Committee (SARC, NMFS) has peer-reviewed fish stock status analyses produced by the Stock Assessment Workshop (SAW). The objectives of the SAW are: to rigorously evaluate the methods and population models developed to assess fish stocks; to ensure the appropriate use of the data in these models; and to determine the status of the fishery examined.

One of the key terms of reference of SAW is to “evaluate models used to estimate population parameters (e.g., *F*, biomass, abundance) and biological reference points” (BRP) and examine population parameters with respect to BRPs. This NMFS process culminates in scientific advice used by fishery managers for U.S. NE Atlantic fisheries, including SD.

In 1996, ASMFC was mandated to “implement a process for the peer review of fish population models upon which fishery management decisions are based” and monitor stock assessments of all managed species on the Peer Review Schedule. This process is known as the Benchmark Assessment Framework. The Management and Science Committee provides oversight and review of the stock assessment peer review process for ASMFC.

U.S. benchmark stock assessments are invoked by new fishery management actions and refer to an assessment that goes through an extensive external peer review to validate the credibility of the scientific basis for management. The objectives are: to improve the quality of stock assessments; ensure that stock assessments managed by ASMFC periodically undergo a formal peer review; and improve public understanding of the assessments. Details of how a benchmark assessment is conducted at various stages are outlined in the Benchmark Assessment Framework (2009).

In the case of SD, stock status was not evaluated prior to 1998 and the fishery was driven solely by market demand. With no restraint on the harvest of SD in the US, fishing effort increased in the 1990s and most of that effort was directed on the removal of the adult female component of the stocks. This culminated in NMFS designating SD as overfished in April 1998, mandating the

development of a federal FMP. MAFMC and NEFMC, in waters outside of the EEZ (beyond 3 miles), and ASMFC in State waters were authorized to jointly manage the SD fishery. In support of the FMP, NMFS (as for other groundfish) was mandated to assess the status of SD under the Benchmark Assessment Framework to provide scientific advice to the management bodies noted above.

This set the stage for the first SD assessment in 1998 and the species was subsequently assessed in 2002 and 2006 under SAW/SARC. For the first time in 2010, the assessment was done under TRAC a joint U.S. / Canada stock assessment framework that is used for stocks that are shared resources across the U.S. - Canada boundary. Following this initial TRAC, the 2010 Stock Status Report for US SD stated that *“There is no co-management of SD by Canada and the US. In Canada, a precautionary total allowable catch is set based upon historical catches pending development of a trans-boundary stock assessment and establishment of a harvest strategy with associated reference points.”* Thus, a consensus trans-boundary stock assessment was not developed in 2010 and the incorporation of status of SD and management advice in Canada was deferred until an accepted TRAC assessment was available. However, given that US management advice was required for 2010 fishing year, the TRAC agreed to accept the 2006 NEFSC assessment model (NEFSC 2006) with data updated through the 2009 NEFSC spring survey, to determine stock status in relation to the BRPs, described below.

4.3 Assessment and stock status

In assessing and managing SD, it is considered as a single stock in US waters and thus must be considered as a unit for the description of the assessment for the certification process. The UoCs under consideration comprise a large portion of this stock (about 95%). Thus, the following description of the assessment applies to the overall stock but also corresponds to the UoC as a whole. The following sections summarize the results of the most recent SD assessment (2010 TRAC, Rago & Sosebee 2010a and b), which constitute an update of the 2006 SAW/SARC results (NEFSC 2006).

4.3.1 Data Sources – Fishing Mortality

TRAC 2010 Proceedings state that compared to other shark species, assessments of SD are supported by abundant fishery independent and dependent data. Nonetheless, information gaps in landings and surveys are evident while no routine age data are collected.

Fishery removals, namely landing and discard statistics by gear type and area (State), are used to estimate mortality. Landing statistics from each of the States derived from official landing records reported to NMFS plus gear based estimates of dead discards, collectively constitute the estimates of commercial fishery removals used to estimate F. Biological sampling of the landings to obtain data on size of fish caught by sex generally coincide with the seasonal pattern of landings; most samples were taken in June through November with much lower effort from January to May. Observer trips are sampled for landed and discarded fish by gear type, month, and region (TRAC Proceedings 2010). Thus, length / sex based removals are available to incorporate into the assessment model.

Estimates of the recreational catch of SD, collected consistently since 1979, were obtained from the NMFS Marine Recreational Fishery Statistics Survey (MRFSS, Van Voorhees *et al.* 1992). The MRFSS estimates: catches representing landed fish enumerated by the interviewer; landed catches reported by the angler; and catches taken and returned to the water.

4.3.2 Data sources - biomass and abundance indices

The data used to estimate biomass and abundance of SD are derived from spring and autumn bottom trawl surveys conducted annually since 1963 by the NEFSC, providing a long time series of fishery independent abundance and biomass data. The surveys extend from the Gulf of Maine to Cape Hatteras on the U.S. continental shelf covering nearly all of the US range of SD. Details on the stratified random survey design and biological sampling methodology are found in Grosslein (1969) and Azarovitz (1981). The sex of SD was not routinely examined until 1980 but there are some data

by sex for the period 1968 - 72. Thus, the analyses are sex disaggregated. Further details of the surveys are available in the TRAC 2010 Proceedings and the 2006 SAW.

Data on SD survey catch per unit effort (CPUE) was also available for the ME / NH inshore bottom trawl survey, 2000 - 08. However, this survey is constrained in space, time and fish sizes and thus is of limited value in examining trends in SD stock abundance.

4.3.3 Assessment model

The SD assessment set is based on female spawning stock biomass (SSB), the necessary spawning component for rebuilding and sustaining the population. The following section is derived from the 2010 TRAC Status Report.

The 2010 model to assess SD was based on swept area biomass estimates derived from the NEFSC spring bottom trawl survey, recreational and commercial landings of SD coupled with discard estimates in U.S. fisheries. Uncertainty in all of these components was characterized using a stochastic model that estimates the joint effects of these sources of uncertainty on the estimated biomass and fishing mortality rates. Information about the footprint of the trawl was used to impute survey catchability (q) for SD. A mass balance model provided evidence that the swept area survey estimates of abundance are close to the absolute estimates and thus area swept estimates are used as absolute estimates of abundance. The assumption that all SD in the path of the gear were captured seems unlikely for a highly mobile and semi-pelagic species. Some escapement probably occurred and fish were likely present above the gear that were not captured. That $q=1$ was used to derive an absolute estimate of abundance is a conservative approach and abundance is likely higher than that actually estimated.

The 2010 TRAC examined two different forward projecting benchmark models. The first model considered the SD stock as composed of two (U.S. and Canada) spatially interacting components by age, length and sex. The second, implemented in Stock Synthesis 3 (SS3), considered the population as a single unit stock of female SD without spatial structure and with an annual time step. Fishery selectivity of two fleets, defined as U.S. landings and U.S. discards aggregated over all gear types, was allowed to vary over time using a random walk. While the two models represented progress from the approach used in the NEFSC 2006 assessment, comparing the performance of the two models was difficult because of differences in the data used in model fitting and to the widely divergent assumptions in each model. Neither model was accepted by the TRAC due to unacceptable levels of uncertainty in the model outputs. Further model explorations were encouraged in both cases.

Rago & Sosebee indicated that *“Biomass and fishing mortality reference points are required for US management purposes. The US is currently working with Canada on a more comprehensive joint stock assessment that may lead to revisions in the biomass estimates and biological reference points. Canada does not have the same requirements for fishery resource management. At present, the utility of the revised reference points herein is restricted to management processes in the U.S. only”*. This work separate from the TRAC joint analyses forms the basis for the management of U.S. SD and is described below.

Subsequent to TRAC 2010, the USA conducted its own assessment of SD based on U.S. fish stock only (Rago & Sosebee 2010a and b) deriving biological reference points for U.S. SD. This was done because the US management system requires the derivation of BRPs while Canada does not. This aspect of the assessment was used as the basis for management of the U.S. SD stock. Natural mortality (M) of SD is assumed to be 0.092 based on a life span of 50 years. Selectivity patterns for exploited female and male SD were developed for landings plus discards. A size- and sex-structured equilibrium life history model is used to estimate yield per recruit and female pups per recruit corresponding to various levels of F and the minimum size at entry to the fishery. Biological data on the relationship between maternal size, and numbers and size of pups are also incorporated. A stochastic, length-based projection model is used to predict yield, population sizes and rebuilding times under alternative management scenarios.

4.3.4 Assessment results

Units of SSB for SD constitute survey biomass (mt) for females >80 cm. The female SSB increased from 1980 through 1989 but declined following commencement of the directed fishery in 1989, from 234,000 mt in 1991 to 52,000 mt in 1999, and remained below 65,000 mt through 2005 (Figure 12). SSB has since increased, reaching 195,000 mt in 2008 before reducing to 163,000 mt in 2009. The trend in juvenile female biomass increased through 1992 and has since slowly declined. The male biomass has generally increased over time.

Annual estimates of biomass of SD ≤ 35 cm (1-2 years old) indicated highly variable recruitment between 1968 and 1996 (Figure 13). From 1997 to 2003, pup production was a record low, but has subsequently improved and recent recruitment has been moderate. Recruitment in 2009 was the fifth highest in the 42-year NEFSC spring survey time series. Recruits per spawner was highly variable among years but was the fifth highest value in 2009 (Figure 14).

Fishing mortality (F = female catch / female exploitable biomass) peaked in 1994 at 0.47 and remained high until 2001 (Figure 15). Subsequently, the estimated F has been lower, with the exception of 2004, and ranged between 0.11 and 0.13 during 2005-2008.

Changes in the size structure of the population and sex ratio were observed in the landings and multiple surveys. A method was employed to establish feasible ranges of abundance based on assumed survey catchability factors and plausible ranges of historical fishing mortality rates.

Productivity

The low abundance of pups during 1997 - 2003 is expected to result in reduced spawning biomass when these weak cohorts reach maturity. Declines in the abundance of SD >60 cm suggest that the estimates of low pup production are not artifacts of reduced availability to the survey gear. Short term increases in stock size will continue for several more years until the effects of reduced recruitment during 1997-2003 causes SSB to decline. Population size structure, reflected in both US commercial and survey length frequency data, indicates that a pronounced consistent decline in the average length of mature females occurred from 1992 through the early 2000s.

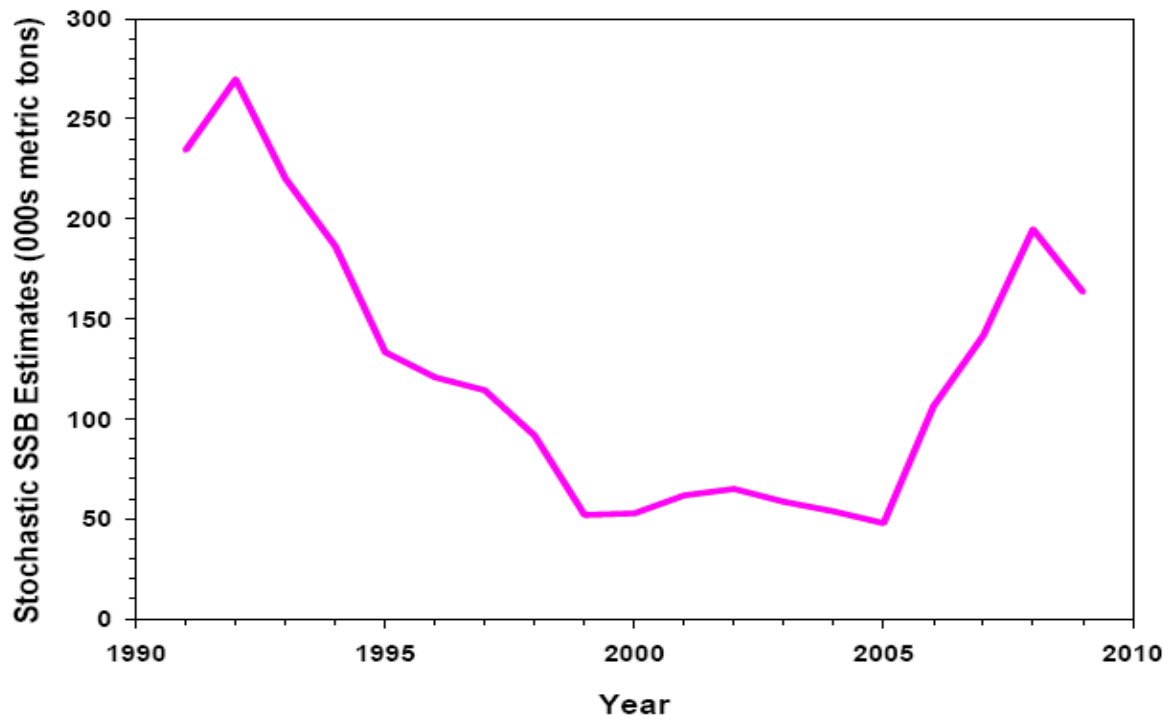
Average mature female weight declined in the early 1990s from 3.5 kg and has been stable at 2.7 kg since 1995 (Figure 16). Females are now about the same average weight as was observed in the late 1960s. Average pup size in the surveys declined, consistent with the observed relationship between maternal size and average pup length but has increased rapidly in the last three years from 0.055 to 0.08 kg which is similar to the size observed prior to the decline.

The sex ratio of mature males (>60 cm) to females (>80 cm) increased in 1993, rose nearly 3-fold by 2000, but has declined from 2004 to 2008 to where the ratio is similar to what was observed in the mid-1990s (Figure 17). The skewed sex ratio may have implications for decreased reproductive output, but direct evidence for this effect is lacking as recruitment has increased considerably in recent years. Spatial distributions since 1995 indicate that male SD are distributed closer to shore than during 1980-1995, while the distribution of females has not changed (TRAC 2010). These spatial patterns increase the potential overlap of the two sexes; however, the effect of this increased co-occurrence on productivity is speculative (e.g., increased cannibalism of pups; interference of typical mating behaviors).

Outlook

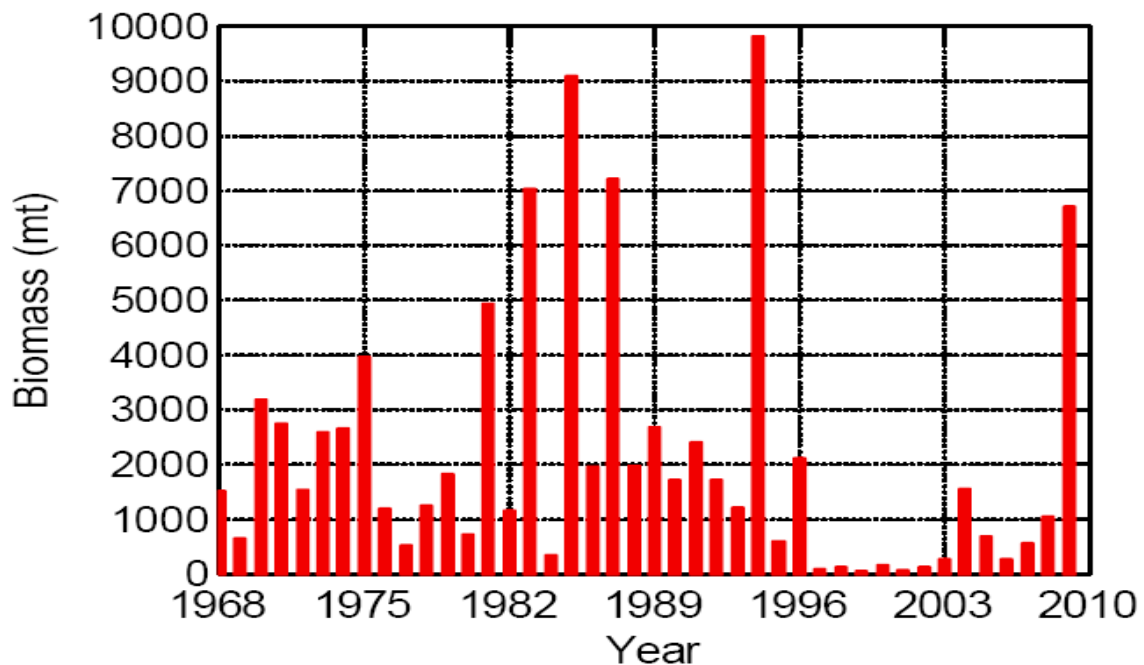
Short term forecasts of SD biomass are strongly influenced by the size structure of the current population. Under the *status quo* F ($F=0.11$), the biomass of mature females was expected to continue to increase through 2011 as fish < 80 cm grew and matured. Long term projections suggest that SSB will decline between 2012 and 2017 as the low number of 1997 - 2003 recruits matures (Rago & Sosebee 2010a and b). If recruitment then returns to levels consistent with the expected size-specific reproduction, the mature female biomass will increase again. These oscillations are expected to occur irrespective of the intensity of fishing.

Figure 12: Stochastic estimates of spawning stock biomass (SSB, females >80 cm)



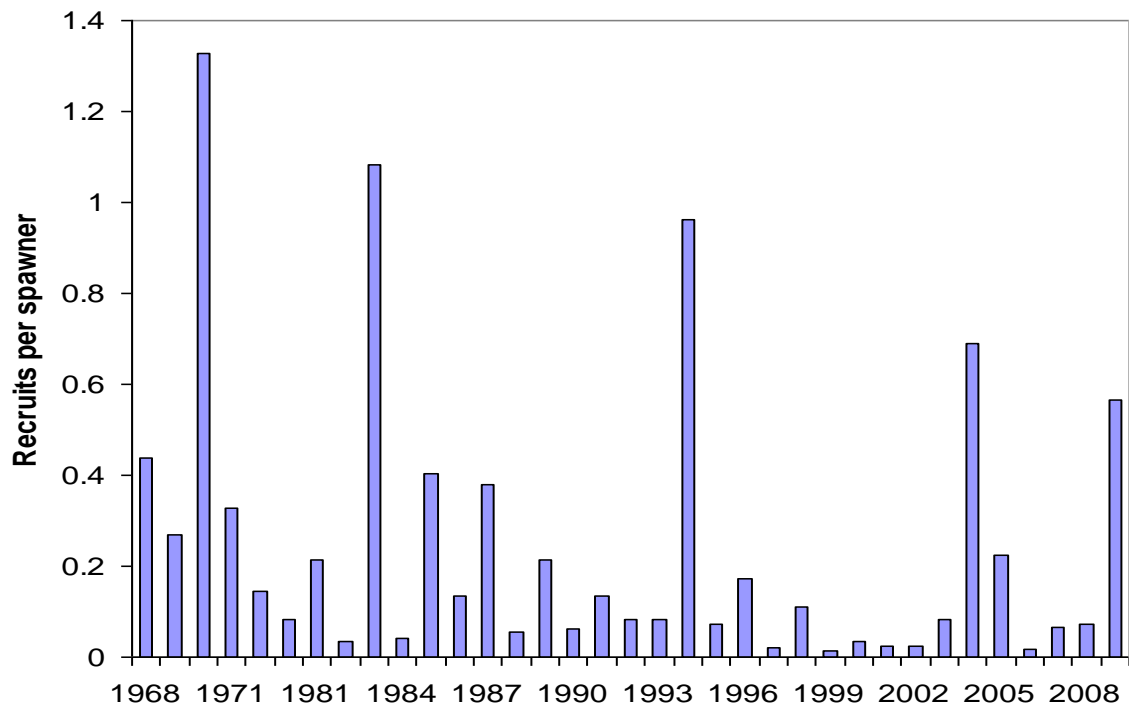
Source: TRAC Status Report 2010-02

Figure 13: Recruitment - Biomass of SD pups (<=25 cm) from the US spring survey



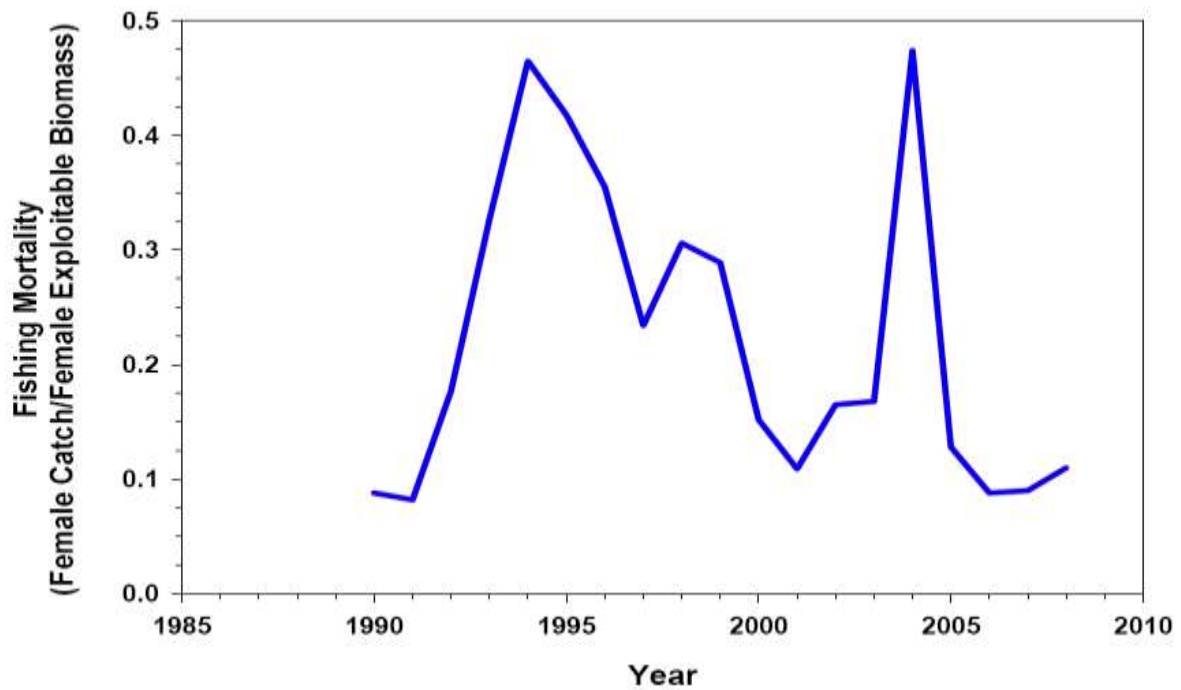
Source: TRAC Status Report 2010-02

Figure 14: Recruits per spawner



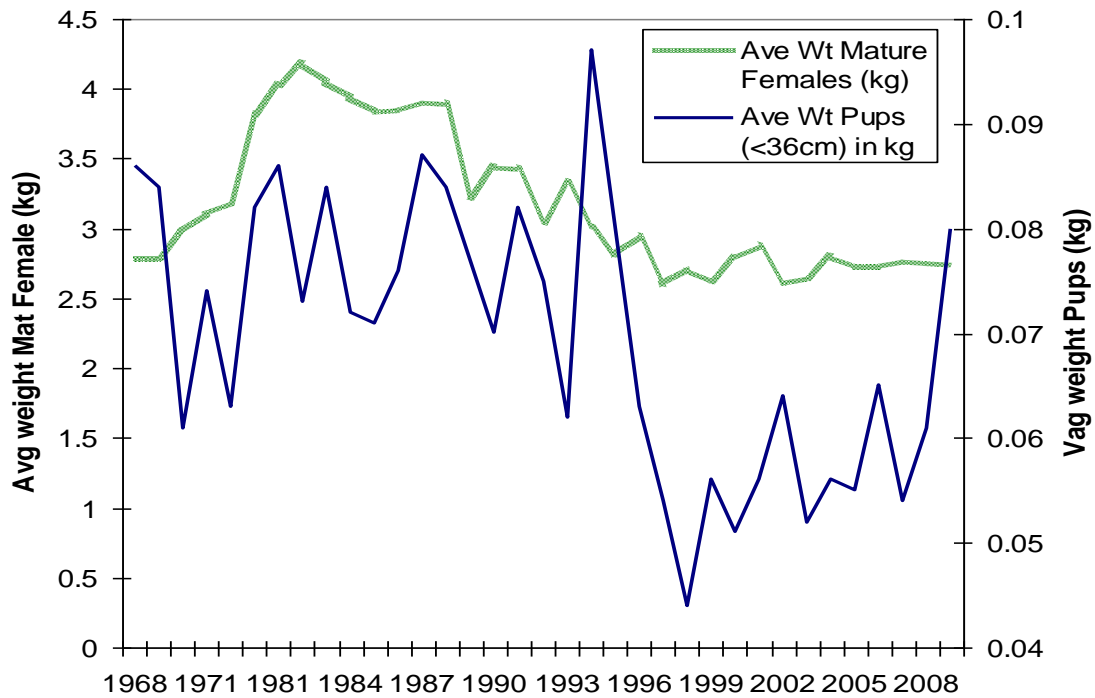
Source: TRAC Status Report 2010-02

Figure 15: SD fishing mortality, F (female catch/exploitable female biomass)



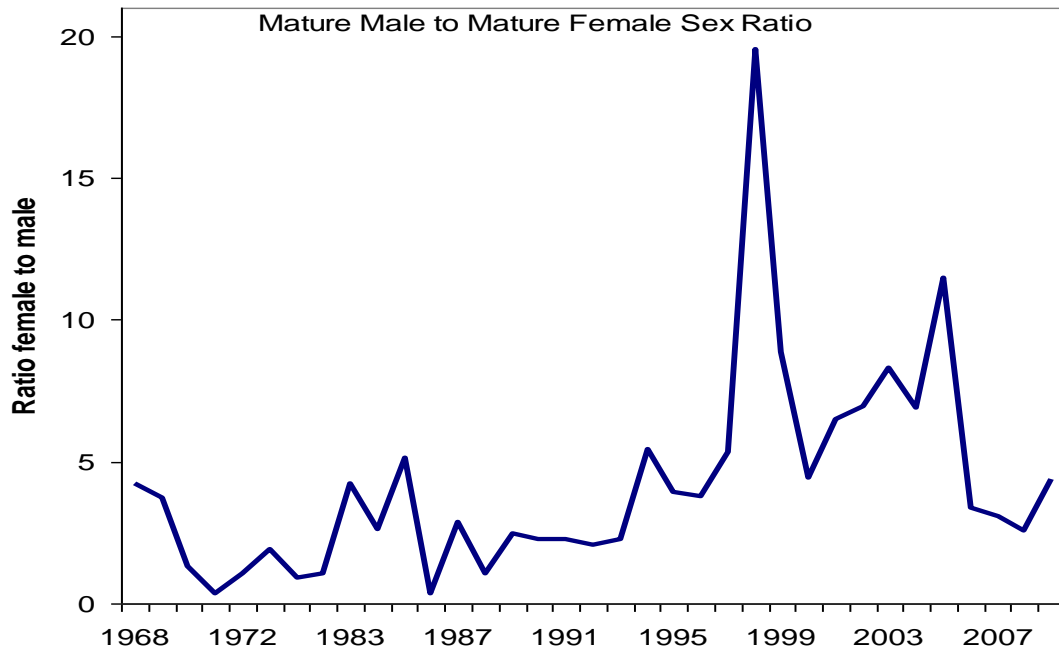
Source: TRAC Status Report 2010-02

Figure 16: Mature female and pup average weight from the surveys



Source: TRAC 2010

Figure 17: Mature male to mature female ratio from the surveys



Source: TRAC 2010

Special Considerations

The overall population biomass of SD (male, females and juveniles) is currently high, greater than 500,000 mt. About 60% of the total biomass is male. The current size composition of the female biomass is predominately between 70 cm - 95 cm, whereas a broader size range (40 - 105 cm) was evident prior to 1988.

The magnitude of total discard and estimated mortality of discarded fish is highly uncertain and influences the estimation of selectivity, fishing mortality and exploitable biomass and fishing mortality reference points.

4.3.5 BRPs and Harvest Strategy

The U.S. bases its fishery management objectives on biomass and mortality levels in relation to BRPs consistent with MSY (Kilduff *et al.* 2009). This approach used to assess the status of U.S. SD is consistent with the MSC standard.

When overfishing became evident, the U.S. harvest strategy had to comply with the provisions of the Magnuson–Stevens Fishery Conservation and Management Act (MSA) (since reauthorized). As such, when SD was declared overfished in 1998, this invoked the requirement to rebuild the stock. Accordingly, managers were required to maintain exploitation below a defined level of fishing mortality, FREBUILD that would lead to SSB reaching or exceeding the B_{MSY} proxy within a 10-year rebuilding horizon. SSBMAX, the (female) spawning stock biomass that is thought to result in the maximum projected recruitment was used as the proxy for B_{MSY} for SD.

The BRP established in the initial (1999) FMP included a BTARGET of 180,000 mt and a BTHRESHOLD of 100,000 mt, (both expressed in terms of adult (≥ 80 cm) female biomass), and an FTHRESHOLD of $F=0.11$ and an FTARGET of $F=0.08$. The threshold and target fishing mortality rates represent the full F corresponding to a knife edge fishery selectivity pattern with a minimum size of 70 cm.

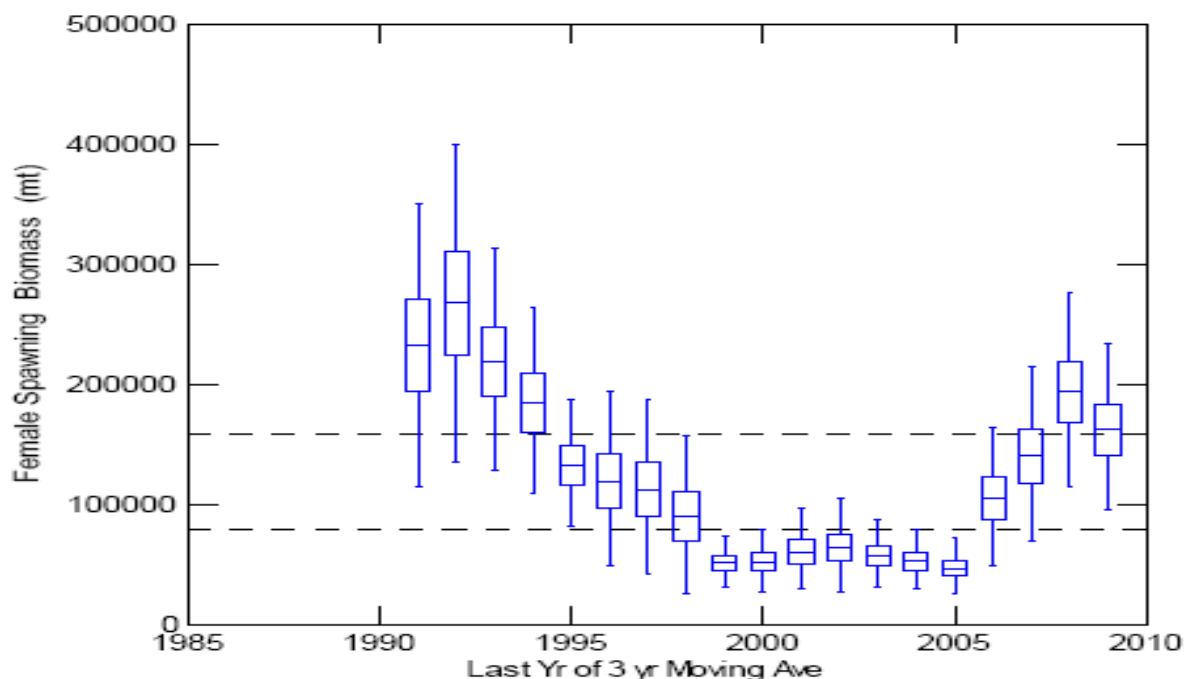
The BTARGET RP was subsequently not accepted by NMFS because it did not correspond to the biomass associated with maximum recruitment (approximately 200,000 mt) in a Ricker stock-recruitment function. At SARC 43 in 2006, biomass RPs were re-estimated using the Ricker model using updated survey data. These results gave an unrealistically high estimate of SSBMAX which was rejected by the 2006 SARC. Ricker model results suggest that the recent stanza of lower than expected recruitment could be associated with changes in maternal size (fewer large females), and, possibly, the ratio of mature males to females.

The BRPs were updated by Rago & Sosebee (2010a). As before, biomass RPs were based on a Ricker stock-recruitment model but in the new formulation also incorporated information on the average size of the recruits as an important explanatory variable. A hierarchical AIC-based model building approach was used to identify the best model. The revised target RP, expressed in terms of average weight per tow of mature (> 80 cm) female SD, was estimated as 30.3 kg/tow. Transformed to swept area biomass, $q=1$ consistent with recent gear mensuration, the biomass target (SSBMAX) corresponding to the survey footprint amounted to 159,288 mt. Applying the convention defined in the current control rule in the SD FMP, the threshold biomass (BTHRESHHOLD) was one half of the target SSBMAX or 79,644 mt.

The updated fishing mortality RP incorporates the most recent information on size composition of discards, landings and surveys. Collectively, these data update the estimated selectivity pattern of the fishery. The updated target and threshold fishing mortality rates are 0.207 and 0.325, respectively. Updated estimates of fishing mortality rates in 2008 were 0.11. Therefore the stock is not experiencing overfishing. Stochastic model estimates of fishing mortality rates suggest that the probability of exceeding either the target or threshold F is near zero.

Comparison of the 1991 to 2009 time series of biomass estimates (Figure 18) reveals that female biomass fell below the target level in 1995 and remained below the threshold level from 1999 to 2005.

Figure 18: Box plots of estimated female spawning stock biomass (mt) based on stochastic estimation model (mt)

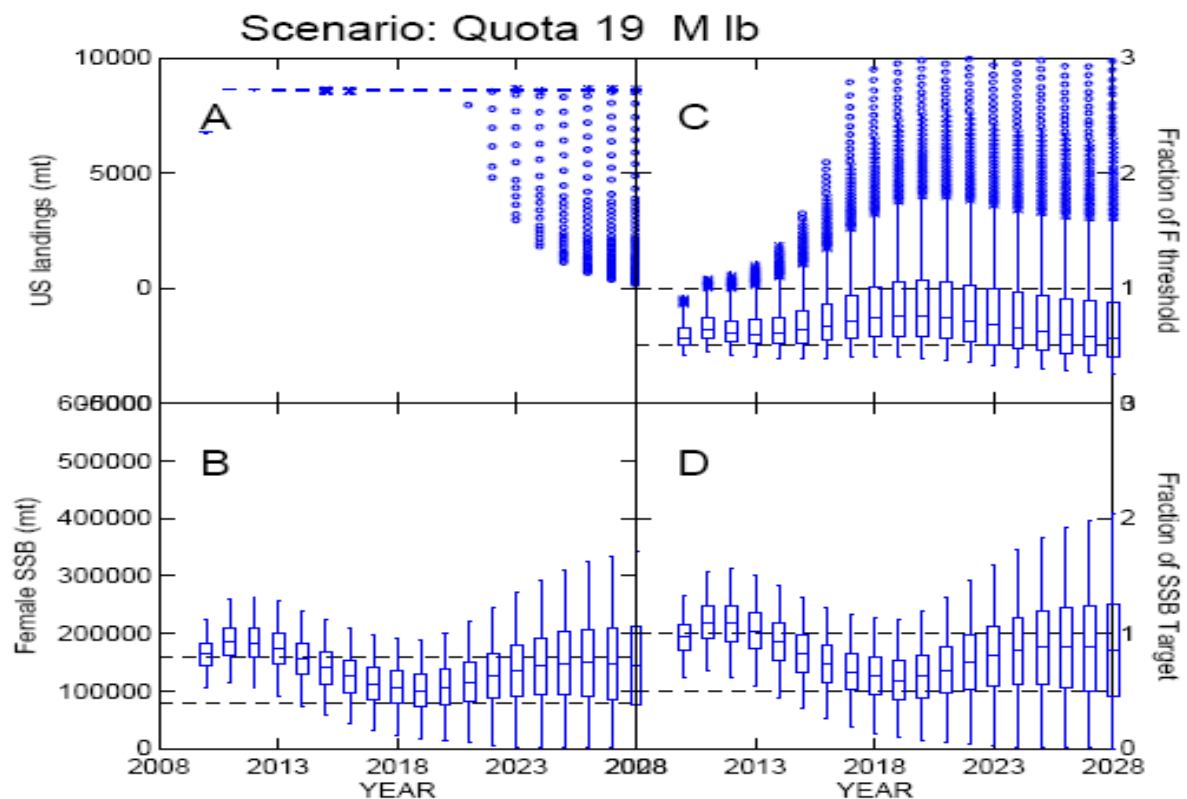


Note: Horizontal dashed lines represent female SSB target of 159,288 mt (upper) and threshold of 79,644 mt (lower) based on Ricker Stock-Recruitment model (Rago & Sosebee 2010a). Center line of box represents median; upper and lower bounds represent interquartile range. Year on X-axis identifies the last year of a 3-year moving average, e.g. 2009 is last year of 2007-2009.

Since 2005 the stock has climbed steadily owing to growth of immature female SD into the 80 cm+ size range, survival and growth of the extant mature individuals and a change in availability. Previous projections of stock biomass (SARC 37, NEFSC 2007) suggested that the population would increase to a median biomass level of about 130,000 mt by about 2007. Comparison of the biomass RP with recent spawning stock biomass estimates, 194,616 mt in 2008 and 163,256 mt in 2009 (Figure 19), indicates that SD biomass exceeded the target biomass. There was about an 80% chance that the female spawning stock biomass exceeded the target of 159,288 mt based on the 0.0119 nm² survey footprint. The updated stochastic estimate of female SSB for 2010 is about 6% above SSBmax (159,288 mt). This is the fourth consecutive year in which the SSB estimate has been above SSBmax. The specific estimate of SSB is 169,415 mt. The probability that the SSB2011 is above SSBmax is estimated to be greater than 50%. The probability that SSB2011 is above the biomass threshold (79,644 mt, i.e., ½SSBmax) is estimated to be 100% (MAFMC 2012). Uncertainty in the biomass estimate is accounted for in the underlying variability in the spring trawl survey data as well as uncertainty in the size of the footprint of the average trawl tow. Uncertainty in the Ricker S-R based biomass reference point is accounted for in the confidence interval associated with model fit.

Therefore, the US SC stock was declared rebuilt and it is not overfished (Rago & Sosebee 2010b), and this remains the case. Stochastic model estimates of female spawning stock biomass suggest a greater than 50% chance of exceeding the biomass target. Projections suggest that the population will oscillate during the teens as the low recruitments from 1997 - 2003 enter into the spawning stock but the population biomass will remain above BTHRESHOLD returning to BTARGET over time.

Figure 19: Projection model estimates of (A) US landings (mt), (B) Female spawning stock biomass (mt), (C) fraction of overfishing threshold (0.325), and (D) fraction of target SSB, 2010-2028 for a harvest scenario based on a constant US quota of 19 million pounds



Note: US landings assume a constant Canadian harvest of 872 mt and constant US recreational catch of 106 mt. Panels C and D represent the probabilities of overfishing and being overfished, respectively.

4.3.6 Management advice

The original (1999) Interstate FMP for SD at the start of the rebuilding phase stated: “*The federal FMP is based on a constant fishing mortality strategy that allows for low bycatch landings in the initial stages with increased landings as the female portion of the stock rebuilds (MAFMC & NEFMC, 1999). The federal FMP specified a coast wide target fishing mortality rate of $F = 0.03$. This F target resulted in an initial quota of 4 million pounds. The annual quota was split on a semi-annual basis of Period I extending from May 1 through October 31, and Period II from November 1 through April 30. The semi-annual quota periods were designed to provide each state with an opportunity to land some quantity of SD. To control the level of effort, the management program also uses possession limits of 600 and 300 pounds for Period I and II, respectively.*”

Since 1999, the quota and the trip limits have been raised on several occasions as SSB (and the stock as a whole) has increased. The following section outlines the harvest strategy that is derived from the 2010 Fisheries Management Plan. For the 2010 fishing year, the Federal Register / Vol. 75, No. 121 / Thursday, June 24, 2010 / Rules and Regulations stated: “*NMFS announces specifications and management measures for the SD fishery for the 2010 fishing year (FY) (May 1, 2010, through April 30, 2011). NMFS is implementing a SD quota of 15 million lb. (6,803.89 t) for FY 2010, and maintaining the possession limit of 3,000 lb. (1.36 mt). These measures are consistent with the SD FMP and based on new biological reference points announced by peer reviewers of the TRAC, which indicated the stock is rebuilt. DATES: Effective July 26, 2010 through April 30, 2011.*”

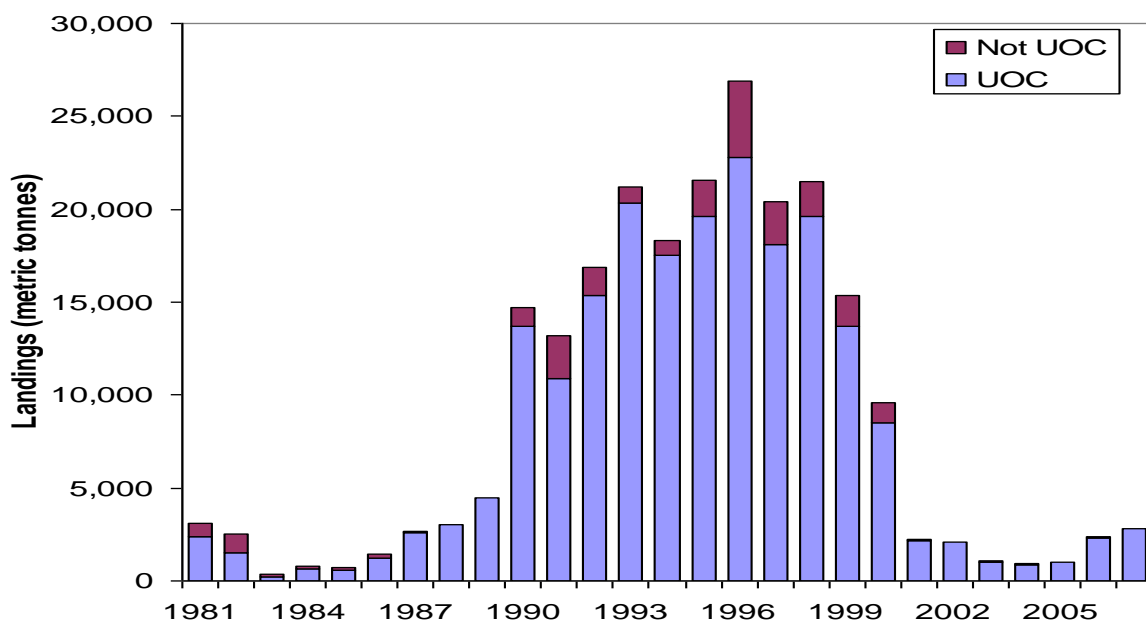
Further, the Nov. 2010 News Release of the ASMFC indicated that for the 2011/2012 fishing year: “The Commission’s SD and Coastal Sharks Management Board approved a 20 million pound quota with a maximum possession limit of 3,000 pounds for the 2011/2012 fishing season (May 1 – April 30). As specified under Addendum II, the quota will be allocated with 58% to States from Maine through Connecticut, 26% to New York through Virginia, and 16% to North Carolina”.

In 2011, a harvest control rule (HCR) was put in place by ASMFC (ASFMC 2012) based on advice from SSC derived from Rago (2011) stating: “The SSC recommends a 1-year specification of ABC. The SSC applied the Council’s risk policy for a typical life history¹, an estimated B_{2012}/B_{msy} ratio > 1 , and a CV of the OFL distribution of 100%. Using these parameters, the Council’s risk policy implies a $P^* = 0.40$. Applying this P^* to the OFL produces an ABC = 20,352 mt (44.9 million pounds).

The SSC notes that the stock biomass is projected to decline in the future because of poor recruitment in earlier years. This trend will mean that the ratio of $B_{current}/B_{msy}$ will become < 1 . As a result, the P^* value developed by the Council’s risk policy will be lower, thereby leading to a reduced ABC in future years.” A multi-year OFL/ABC was also provided in the ASFMC Memo that indicates adaptation to the recruitment fluctuations. The key to this recommendation is that it allows a downward adjustment to the ABC in future years to account for the potential effect of past (1997-2003) low past recruitment. If the exploitable population falls below target as is predicted, ABC can be adjusted accordingly.

This advice applies to the U.S. SD stock in all waters off the U.S. Since 2001, nearly all (98%) of U.S. SD landed have come from UoC States (Figure 20).

Figure 20: U.S. Landings of SD by States covered by the UoC



Source: The audit team

The management advice as it applies to all UoC is consistent with the scientific assessment.

- Prior to setting the SD quota, the Management Board approves new RPs based on information from the latest stock assessment. They included a target biomass of 351.23 million pounds (159,288 mt), a threshold biomass of 175.62 million pounds (79,644 mt), and a fishing mortality target and threshold of 0.207 and 0.325 respectively.

- The 20 million pound quota was set to achieve an F equal to 75% of the target F and is consistent with recommendations of the SD Technical Committee. The Technical Committee recommended reducing the target F by 25% to minimize any future drop in biomass. The quota is also consistent with the level recommended by the MAFMC for federal waters at its October meeting.
- The latest stock assessment indicates that SD is not overfished and overfishing is not occurring. The biomass in 2010 is estimated to be 361.77 million pounds, which is slightly above the target biomass of 351.23 million pounds and is the second year in a row that biomass has exceeded the target. In addition, F was estimated to be $F = 0.113$ in 2009 which is well below the target (0.207) and threshold (0.325) rates and achieved the F rate as designed.
- While SD has rebuilt, the stock is anticipated to decrease below the target biomass around 2014 because of record low recruitment from 1997 – 2003. The magnitude of this drop increases with fishing mortality and is projected to occur even if fishing mortality is zero. Thus, the fishery is presently being managed consistent with scientific advice and in a sustainable manner.

There were 3 votes recently regarding SD:

- 10/12/11 MAFMC voted for a Commercial Quota of 35,694,000 lbs. and daily trip limit of 3,000lbs. <http://www.mafmc.org/fmp/dogfish/dogfish.htm>
- 11/10/11 ASMFC voted for a Commercial Quota of 30,000,000 lbs. and daily trip limit of 3,000lbs. (See attached)
- 11/17/11 NEFMC voted for a Commercial Quota of 35,694,000lbs. and daily trip limit of 3,000lbs. <http://www.nefmc.org/actions/motions/motions-nov11.pdf>

Due to the conflicting quotas, NMFS is considering what commercial quota amount to set when it publishes the Proposed Rule.

5 FISHERY MANAGEMENT FRAMEWORK

5.1 Introduction

Analysis under Principle 3 assesses whether or not the “*management system provides the institutional and operational framework for implementing Principles 1 and 2, appropriate to the size and scale of the fishery*” under two components (3.1 and 3.2).

The assessment considers the total number of boats active in the fishery rather the client group, except where fleet specific management measures relate to that group.

This certification covers a large number of UoC, with gears in federal waters and in the waters of 7 States. This leads to the assessment of management in both Federal waters (with consideration of the roles of NMFS, MAMFC and NEFMC) and State waters in the context of the overriding role of the ASFMC.

5.2 Component 3.1

5.2.1 PI 3.1.1: Legal and/or Customary Framework

The Magnusson-Stevens Fishery Conservation and Management Act

The MSA is the primary law governing marine fisheries management in US federal waters. The Act was first enacted in 1976 and amended in 1996 (Sustainable Fisheries Act (SFA)) to mandate Federal government to stop overfishing, rebuild all overfished stocks, minimize bycatch and protect essential fish habitat.

Defined purposes of the Act include:

- To take immediate action to conserve and manage the fishery resources found off the coasts of the US, and the anadromous species and Continental Shelf fishery resources of the U.S.;
- To promote domestic commercial and recreational fishing under sound conservation and management principles, including the promotion of catch and release programs in recreational fishing;
- To provide for the preparation and implementation, in accordance with national standards, of FMPs which will achieve and maintain, on a continuing basis, the optimum yield (OY) from each fishery;
- To establish RFMCs to exercise sound judgment in the stewardship of fishery resources through the preparation, monitoring, and revision of such plans under circumstances which will enable the States, the fishing industry, consumer and environmental organizations, and other interested persons to participate in, and advise on, the establishment and administration of such plans, and which take into account the social and economic needs of the States. Eight RFMCs were established to serve as planning units to carry out provisions of the Act. Each RFMC is directed to prepare FMPs for implementation by the Secretary of Commerce;
- To promote the protection of essential fish habitat in the review of projects conducted under Federal permits, licenses, or other authorities that affect or have the potential to affect such habitat.

The Magnuson-Stevens Fishery Conservation and Management Reauthorization Act (2006) (MSRA) strengthened the 1996 provisions and extended the Act until 2013. “*The MSRA strengthens requirements for federal managers to end overfishing and to maintain sustainable harvest of healthy fisheries. In addition, managers have an increased mandate to follow scientific advice. These requirements drive the need for sound science and data collection. The MSRA provides an opportunity to forge stronger state/federal partnerships in the interjurisdictional management of Atlantic coast species*” (ASMFC 2008). Among improvements to the law was the requirement that RFMCs establish scientific and statistical committees (SSCs) to help evaluate scientific information and provide the Councils with scientific advice on establishing acceptable biological catch (ABC),

preventing overfishing, establishing MSY and achieving rebuilding targets. Additionally, FMPs must now establish a mechanism for specifying annual catch limits (ACLs) at a level that prevents overfishing together with accountability measures. The catch limits, and accountability measures had to be established by 2010 for fisheries already subject to overfishing and 2011 for other fisheries. For all stocks, whether in rebuilding programs or not, overfishing had to be ended within two years of the determination that the stock is overfished.

National Environmental Policy Act (NEPA)

Another important part of the reauthorization was the goal of integrating NEPA (1969) with the fisheries management process for environmental review. NEPA is a US environmental law that established a US national policy promoting the enhancement of the environment. NEPA contains three important sections:¹ the declaration of national environmental policies and goals; the establishment of action-forcing provisions for federal agencies to enforce those policies and goals; and the establishment of a Council on Environmental Quality (CEQ) in the Executive Office of the President. The essential purpose of NEPA is to ensure that environmental factors are weighted equally when compared to other factors in the decision making process undertaken by federal agencies. NEPA's most significant effect was to set up procedural requirements for all federal government agencies to prepare Environmental Assessments (EAs) and Environmental Impact Statements (EISs).

National Standards

FMPs must conform to national standards and take into consideration social, economic, biological and environmental factors associated with fisheries. The national standards are:

1. Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the US fishing industry.
2. Conservation and management measures shall be based upon the best scientific information available.
3. To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.
4. Conservation and management measures shall not discriminate between residents of different States. If it becomes necessary to allocate or assign fishing privileges among various US fishermen, such allocation shall be: fair and equitable to all such fishermen; reasonably calculated to promote conservation; and carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.
5. Conservation and management measures shall, where practicable, consider efficiency in the utilization of the fishery resources; except that no such measure shall have economic allocation as its sole purpose.
6. Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.
7. Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.
8. Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.
9. Conservation and management measures shall, to the extent practicable, (A) minimize bycatch and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

¹ http://en.wikipedia.org/wiki/National_Environmental_Policy_Act

10. Conservation and management measures shall, to the extent practicable, promote the safety of human life at sea

Atlantic Coastal Fisheries Cooperative Management Act (ACFCMA)

ACFCMA (1993) provides for the coordinated management of coastal migratory fisheries along the US Atlantic coast. It requires the development, implementation and enforcement of coastal FMPs to promote interstate conservation and management of Atlantic coastal fishery resources. This involves the ASMFC, NMFS and the US Fish and Wildlife Service (USFWS). The ACFCMA provides a mechanism to ensure Atlantic coastal state compliance with mandated conservation measures in Commission-approved FMPs. With the act, all Atlantic coast States included in a Commission FMP must comply with certain conservation provisions of the plan. If the ASMFC reports a State to be out of compliance with the mandatory provisions of an ASMFC FMP, the Department of Commerce may implement moratoria on fishing in state waters. A moratorium will be imposed if it is determined that a state has failed to implement measures necessary for the conservation of any species covered under an ASMFC FMP.

The standards contained in Section 805 of the ACFCMA serve as the guiding principles for the conservation and management programs contained in the ASMFC FMPs (ASMFC 2009).

- Conservation programs and management measures shall be designed to prevent overfishing and maintain over time, abundant, self-sustaining stocks of coastal fishery resources. In cases where stocks have become depleted as a result of overfishing and/or other causes, such programs shall be designed to rebuild, restore, and subsequently maintain such stocks so as to assure their sustained availability in fishable abundance on a long-term basis.
- Conservation programs and management measures shall be based on the best scientific information available.
- Conservation programs and management measures shall be designed to achieve equivalent management results throughout the range of a stock or subgroups of that stock.
- Management measures shall be designed to minimize waste of fishery resources.
- Conservation programs and management measures shall be designed to protect fish habitats.
- Development and implementation of FMPs shall provide for public participation and comment, including public hearings.
- Fairness & equity (i) An FMP should allow internal flexibility within States to achieve its objectives while implemented and administered by the States; and (ii) Fishery resources shall be fairly and equitably allocated or assigned among the States.

Other Laws

US fishery regulations must comply with many laws apart from the MSA (MAFMC 2008). These include NEPA, the Marine Mammal Protection Act (MMPA), the Endangered Species Act (ESA), the Coastal Zone Management Act (CZMA), the Administrative Procedures Act, the Paperwork Reduction Act, the Regulatory Flexibility, the Interjurisdictional Fisheries Act, ACFCMA and the National Marine Sanctuaries Act. International agreements and organizations, such as the International Convention for the Conservation of Atlantic Tunas, Inter-American Tropical Tuna Commission, and the United Nation's Code of Conduct for Responsible Fisheries, also play roles in shaping management of US fisheries.

Marine Mammal Protection Act

The MMPA (1972) as subsequently reauthorized protects all marine mammals, prohibiting, with certain exceptions, the "take" of marine mammals in US waters and by US citizens on the high seas. One of the underlying goals of the MMPA is to reduce the incidental serious injury and mortality of marine mammals in commercial fishing operations to insignificant levels approaching a zero mortality and serious injury rate. The 1994 Amendment, calls for "take reduction plans" to assist in the recovery or prevent the depletion of strategic stocks that interact with a Category I or II fishery. A strategic stock is a stock: (i) for which the level of direct human-caused mortality exceeds the

potential biological removal (PBR) level; (ii) which is declining and is likely to be listed under the ESA in the foreseeable future; or (iii) which is listed as a threatened or endangered species under the ESA or as a depleted species under the MMPA. Category I and II fisheries are those that have frequent or occasional incidental mortality and serious injury of marine mammals, respectively, whereas Category III fisheries have a remote likelihood of incidental mortality and serious injury of marine mammals. All fishermen, regardless of the category of fishery they participate in, must report all incidental injuries and mortalities caused by commercial fishing operations.

The MMPA requires the authorization of the incidental taking of individuals from marine mammal stocks listed as threatened or endangered under the ESA in the course of commercial fishing operations where (i) incidental mortality and serious injury will have a negligible impact on the affected species or stock; (ii) a recovery plan has been developed or is being developed for such species or stock under the ESA; and (iii) a monitoring program has been established, vessels engaged in such fisheries are registered, and a take reduction plan has been developed or is being developed for such species or stock.

The Endangered Species Act

The ESA (1973) provides for the conservation of species that are endangered or threatened throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend. The taking of endangered sea turtles and marine mammals is prohibited. In addition, NMFS may issue protective regulations necessary and advisable to provide for the conservation of threatened species. There are several mechanisms established in the ESA to avoid the takings prohibition: (i) a regulation may include less stringent requirements intended to reduce incidental take and thus allow for the exemption from the taking prohibition; (ii) the NMFS may permit, under prescribed terms and conditions, any taking otherwise prohibited, if the taking is incidental to, and not the purpose of, carrying out an otherwise lawful activity; and (iii) NMFS must consult with other federal agencies to ensure that any action that is authorized, funded, or carried out by these agencies is not likely to jeopardize the continued existence of any listed species. Section 7(b) authorizes incidental take of listed species after full consultation and identification of reasonable and prudent alternatives or measure to monitor and minimize such take.

The Coastal Zone Management Act

The CZMA (1972) administered by NOAA's Office of Ocean and Coastal Resource Management, provides for management of the nation's coastal resources, including the Great Lakes, and balances economic development with environmental conservation

Federal Fisheries Management Plan

Overview

Federal FMPs cover US waters from the 3 miles out to 200 miles. Under the MSA, a Regional FMC prepares and submits FMPs for fisheries under its authority that require conservation and management.

As noted by McGuire & Harris (2010) "*the Magnuson-Stevens Act uses fisheries management plans to implement fisheries policy including harvest limits, essential fish habitat evaluation, geospatial fishing restrictions, and further requires that management plans be based on the best scientific information available. Additionally, each plan is considered a major federal action, triggering an additional review process under ... NEPA. Regional Fishery Management Councils, under the oversight of the federal fisheries agency, NOAA Fisheries, generally adjust or amend management plans, triggering frequent NEPA reviews*".

Spiny Dogfish FMP

Authority

The SD fishery is jointly managed by the MAFMC and NEFMC, with the former taking the lead. The objective of the Federal FMP is to conserve SD in order to achieve OY from the resource in the western Atlantic Ocean.

The original FMP in 2000 established management of Atlantic SD fisheries and initiated a stock rebuilding plan.

Objectives

The objectives of the Federal FMP are:

- Reduce fishing mortality to ensure that overfishing does not occur;
- Promote compatible management regulations between state and Council jurisdictions and the US and Canada;
- Promote uniform and effective enforcement of regulations;
- Minimize regulations while achieving the management objectives stated above;
- Manage the SD fishery so as to minimize the impact of the regulations on the prosecution of other fisheries, to the extent practicable; and
- Contribute to the protection of biodiversity and ecosystem structure and function.

Adjustments & Amendments

In 2006, Framework Adjustment 1 allowed the specification of commercial quotas with a mechanism for specification of multi-year management measures.

In 2007, Framework Amendment 1 standardized bycatch reporting methodology.

In 2009, framework Adjustment 2 built flexibility into process to define and update status determination criteria.

The Omnibus Amendment document and draft EA will present and evaluate management alternatives that specify mechanisms to set ABCs, annual catch limits (ACLs), and accountability measures for Atlantic mackerel, butterfish, Atlantic bluefish, SD, summer flounder, scup, black sea bass, tilefish, Atlantic surf clam, and ocean quahog, contained within six MAFMC FMPs.

Framework Amendment 2 relates to specific mechanisms to set ABCs and ACLs, as required by the MSRA. Options are under consideration (MAFMC 2010).

Discussion continues on Framework Amendment 3. At a meeting of the Joint SD Committee in December 2010 it was decided not to include the recreational fishery in the FMP nor allow for sex-specific management measures. The remaining five issues under consideration are: quota allocation, RSA provision, limited access, quota rollover provision, and EFH update. These alternatives are being developed by the Fisheries Management Action Team (FMAT) and the Joint Committee for presentation to the MAMFC and NEFMC in April, 2011. The next step would be in a public hearing document.

State Spiny Dogfish FMP

Overview

The State FMP prepared by ASMFC covers the management area for the entire coastwide distribution of the resource from the estuaries eastward to the inshore boundary of the EEZ.

Objectives

The objectives of the State FMP are:

- Reduce fishing mortality and rebuild the spawning stock biomass to prevent recruitment failure and support a more sustainable fishery;
- Coordinate management activities between state, federal and Canadian waters to ensure complementary regulations throughout the species range;
- Minimize the regulatory discards and bycatch of SD within state waters;
- Allocate the available resource in biologically sustainable manner that is equitable to all the fishers; and
- Obtain biological and fishery related data from state waters to improve the SD stock assessment that currently depends upon data from the federal bottom trawl survey.

De Minimis Status

A State may be granted *de minimis* status if its commercial landings of SD are less than 1% of the coastwide commercial total. If a State meets this criterion, it is exempt from biological monitoring of the commercial SD fishery. All States, including those granted *de minimis* status, continue to report any SD commercial or recreational landings within their jurisdiction.

States may petition the SDCSMB at any time for *de minimis* status. Once *de minimis* status is granted, designated States must submit annual reports to the SDCSMB documenting the continuance of *de minimis* status. States must include *de minimis* requests and compliance with *de minimis* requirements as part of their annual compliance reports (ASMFC 2002). Currently, 4 States have *de minimis* status – DE, SC, GA and FLA.

Appeals

The purpose of the appeals process is to provide a mechanism for a state / jurisdiction to petition for a management decision to be reconsidered, repealed or altered. The appeals process is intended to only be used in extraordinary circumstances where all other options have been exhausted. The management boards have the ability to go back and correct errors or address additional technical information and amend or rescind previous board actions. In making an appeal, the appellant must use one of the following criteria as justification: decision not consistent with FMP; failure to follow process; insufficient/inaccurate/incorrect application of technical information; historical landings period not adequately addressed; or management actions resulting in unforeseen circumstances/impacts.

The following may not be appealed: management measures established via emergency action; out-of-compliance findings (this can be appealed but, through a separate, established process); and changes to the ISFMP Charter

State Compliance

States are expected to implement FMP measures under state laws. The AFMFC monitors the effectiveness of State implementation and determines whether States are in compliance with the provisions of the FMP.

A State is determined to be out of compliance with the provisions of the FMP if: its regulatory and management programs have not been approved by the SDCSMB; or it fails to meet any required schedule or any addendum; or it has failed to implement a change to its program when determined necessary by the SDCSMB; or it makes a change to its regulations without prior approval of the SDCSMB. To be considered in compliance with the FMP, all State programs must include harvest controls on SD fisheries consistent with the FMP, except that a State may propose an alternative management program which may be implemented as an alternative regulatory requirement for compliance.

Other regulations cover the implementation of the FMP, including closure of the fishery, quotas, reporting, and weekly reporting by those having dealer permits, possession limits, the bio-medical quota and the prohibition on finning.

On December 5, 1994 (59 Federal Register 63326, December 8, 1994), NMFS first used the ACFCMA by finding NJ not in compliance with the ASFMC ISFMPs for Atlantic sturgeon, bluefish, and weakfish.

Law Enforcement Reporting Requirements

All State programs must include law enforcement capabilities adequate for successfully implementing a State's SD regulations. The adequacy of a State's enforcement activity is monitored annually by reports of the ASMFC Law Enforcement Committee to the SD Plan Review Team.

Addendums

Addendum 1 (2005) allows, but does not require, for the establishment of SD specifications for up to five years. Multiyear Total Allowable Landings (TAL) and other management measures do not have to be constant from year to year. They are based upon expectations of future stock conditions as indicated by scientific information. When multi-year commercial quotas and trip limits are implemented, there must be an annual review of updated information on the fishery and stock conditions and an evaluation of the specified management measures on the basis of stock assessments and established target fishing mortality.

Addendum 2 (2008) established regional quotas in place of the previous seasonal system, with division between the northern States (58 %) (ME, NH, MA, RI and CT), the southern States (26 %) (NY, NJ, DE, MD and VA) and NC (16%). When the quota in any of the three is reached then the fishery is stopped with any overages deducted from the next quota.

Draft Addendum 3 provides seven alternatives to allocate 42% of the annual quota to States from NY through NC through state-specific shares. Other measures include quota transfer, quota payback, and possession limit options. The proposed measures do not impact the quota allocation or possession limits for ME through CT. The Draft Addendum was initiated to provide the southern States greater flexibility in managing their quotas through state-specific quotas. Some States have expressed interest in lowering daily possession limits when demand and value are low and increasing them when demand and value are greatest. The current system does not allow an individual state (with the exception of NC) to do so without having less access to the regional quota. Under the current system if a state chose to lower its possession limit, other States could continue to harvest the regional quota under the 3,000 pound daily possession limit. Individual state quotas could allow a state to set possession limits that maximize the return to its fishermen.

States

The Plan Review Team (PRT) (AFMSC 2009) found that "*all of the States with a declared interest in the management of SD who submitted reports, have regulations in place that are compliant with the Interstate Fisheries Management Plan for SD. Maine DMR intends to review applications and potentially issue exempted fishing permits in 2009*".

Maine

In ME, marine fisheries are the responsibility of the Department of Marine Resources. The marine fishery is covered by the Title 12 of the statutes, part 9 chapters 601 to 611.

The vision of the Maine Fisherman's Forum¹ on which the department has representation is: is: "*there is a healthy fishing industry engaged in stewardship and self-regulation, utilizing resources that are maintained at sustainable levels with continuous opportunity for independent fishermen to have responsible access to the commercial waterfront, the resources, and fishing grounds; management decisions are made at as local a level as appropriate and are based upon a broad*

¹ <http://www.mainefishermensforum.org/about.htm>

systems approach; and the public and the industry are continuously informed in a constructive manner about the resources, the industry and their issues”.

While the goals are: *“an educated public and industry; interaction and sharing among industry, science, and managers; an industry, the segments of which actively listen to one another and understand one another and each other’s particular issue (this would include managers and the environmental community); and enhanced networks and a sense of community”.*

New Hampshire

State management of the SD fishery is under the authority of the New Hampshire Fish and Game Department.

Part of the legal framework is the Marine Fishing Rules¹ with SD covered in FIS 603.19. This states: *“No person shall take, land or possess SD in state waters whenever the state has been notified by the ASMFC that the state quota has been taken; During any time period for which SD is closed ... SD shall: only be taken by angling; be for personal use only; and not be sold; The open season for taking SD in state waters shall be August 1 through April 30. The executive director may revise the opening of the season by up to 3 months depending on the quotas set by the ASMFC; Finning shall be prohibited. "Finning" means the taking of SD, removing the fins, and returning the remainder of the SD to the sea, The executive director shall set trip limits up to 7,000 pounds depending on the quotas and trip limits set by the ASMFC; and Any person who is not a permitted federal dealer, shall report each week the following information: the quantity in pounds of SD purchased; the harvester’s name and coastal harvest permit number or NMFS permit number; and the vessel name and registration number from whom SD were purchased”.*

The other part of the legal framework is the New Hampshire Statutes, where Chapter 213 relates to adherence to the ASMFC.²

Massachusetts

The Division of Marine Fisheries has responsibility for marine fisheries. As stated in the Strategic Plan (2009) *“the Commonwealth, through Chapter 130 of Massachusetts General Law (M.G.L. c. 130), the Atlantic Coastal Fisheries Cooperative Management Act (ACFC MA) and MSA) the Division is involved with fisheries management at multiple levels of government (state, interstate and federal)”.* Also *“Marine Fisheries receives its mandate from the General Laws of the Commonwealth, specifically Chapter 130 of Massachusetts General Laws (M.G.L. c. 130). This statute provides the Director with broad authority to manage the Commonwealth’s marine fisheries and related resources, including the manner, legal limits and numbers of times when and areas where, fish may be taken. Further, it denotes a clear role for the Marine Fisheries Advisory Commission, relating to the management of major fisheries. The Marine Fisheries Advisory Commission is a nine-member citizen’s board appointed by the Governor to assist the Director with setting fisheries laws”.*

The Oceans Act (2008) requires Massachusetts to develop a comprehensive plan to manage development in its state waters and balance natural resource protection with traditional and emerging uses.

Stated goals of the division are:

“To improve fisheries sustainability, promote responsible harvest and optimize production of our living marine resources; Promote and support our commercial and recreational fisheries; Promote and support industry and community involvement in the fisheries management process; Foster

¹ http://www.gencourt.state.nh.us/rules/state_agencies/fis600.html

² <http://www.gencourt.state.nh.us/rsa/html/NHTOC/NHTOC-XVIII.htm>

partnerships that help accomplish the Division's mission: Support continued development of an ecologically sustainable marine aquaculture industry; Promote a high level of staff commitment and professionalism; and Ensure that marine spatial planning activities are compatible with fisheries management".

Public hearings are held on a regular basis; in the first quarter of 2011 for example there were seven days of meetings covering issues such as management, recreational scup, black sea bass, and fluke management and winter and spring cod conservation zone closures, MA ASMFC hearing on Atlantic herring and a hearing on monkfish catch share management.

The Massachusetts Marine Fisheries Advisory Commission is a nine member board, representing recreational and commercial fishing interests (including seafood dealers), from various parts of the Massachusetts coast.

Rhode Island

The Division of Fish and Wildlife in the Bureau of Natural Resources is the responsible authority.

The Division sets rules and regulations to manage the marine resources of the state pursuant to Chapter 42-17.1, Section 20-1-4, Section 20-2.1 and Public Laws Chapter 02-047, in accordance with Chapter 42-35 of the Rhode Island General Laws of 1956, as amended (State of RI 2010).

SD is in the non-restricted category with licenses available to new participants issued a basic commercial fishing license with a non-restricted endorsement. The species is not mentioned in the state management plan that identifies fisheries that the Department of Environmental Management proposes to limit entry at current levels of effort and fisheries for which new licenses may be issued.

A Marine Fisheries Council is composed by the Director of the Department of Environmental Management and eight stakeholders: three representing the commercial fishing industry; three representing the interests of sport fishing; and two with experience in the conservation and management of fisheries resources and/or marine biology.

New Jersey

All laws and regulations relating to commercial fishing can be found in New Jersey Statutes Annotated, Titles 23 and 50, and New Jersey Administrative Code, Title 7, Subtitle E, Chapter 25 and 25A. The responsible authority is the Marine Fisheries Administration of the New Jersey Division of Fish & Wildlife, part of the Natural and Historic Resources Group in the NJ Department of Environmental Protection.

The Commercial Regulations of April 9, 2010 state that: *"a valid annual vessel permit for SD, issued by the NMFS, is required to sell or offer to sell SD; a valid annual dealer permit for SD, issued by the NMFS, is required to purchase or accept SD; no person or vessel shall possess and no dealer shall accept from any one person or vessel more than the daily trip limit as set by the NMFS or the ASMFC; and the fins may not be removed from any SD until fishing has ceased and such SD has been landed at a pier, dock, or wharf where it may be inspected"*.

The NJ Division of Fish and Wildlife is an environmental agency dedicated to the protection, management and wise use of New Jersey's fish and wildlife resources.

The NJ Marine Fisheries Council was created by the Marine Fisheries Management and Commercial Fisheries Act of 1979 (N.J.S.A.23:2B). The council meets bi-monthly. It has eleven members: four sports fishermen; two active commercial fin fishermen; one active fish processor; two members of the general public; and the chairman of the two sections of the Shellfisheries Council. Its duties include: to contribute to the preparation and revision of FMPs; disapprove any rule or regulation or any amendment proposed by the commissioner; advise the commissioner on policies of the department and in the planning, development, and implementation of all departmental programs related to marine

and shellfish; examine, consider and make recommendations in any matters pertaining to the conservation and management of fisheries resources throughout the State; submit to the commissioner any recommendations for new rules and regulations or revision to existing rules and regulations which it deems necessary for the proper operation of an effective marine fisheries program; hold periodic public hearings in regard to current issues affecting the operation of the marine fisheries program; recommend the convening of species related citizen panels; and study and analyze economic, social and ecological data relating to the operation of the marine fisheries program.

Virginia

Established in 1875 as the Virginia Fish Commission, the Virginia Marine Resources Commission (VMRC) is one of the oldest agencies in Virginia State Government.

Regulation 4 VAC 20-490-10 *et seq* defines that there can be no harvest of SD once it has been announced that the Interstate Quota for SD has been taken; the trip limit is 3,000 pounds and all commercially harvested SD must be sold to a federally permitted dealer

North Carolina

The North Carolina Division of Marine Fisheries (DMF) is responsible for the stewardship of the state's marine and estuarine resources.

The vision of the DMF is to “*ensure healthy, sustainable marine and estuarine fisheries and habitats through management decisions based on sound data and objective analyses; provide excellent public service by motivated employees in an open and healthy working environment; view public participation as essential for successful management of North Carolina’s fisheries resources; and enforce Marine Fisheries statutes and rules fairly and consistently*”.

The state law is based on N.C.G.S. 113-170.4; 113-170.5; 113-182; 113-221.1; 143B-289.52; and N.C. Marine Fisheries Rules 15A NCAC 03H .0103 and 03M.0512.

Proclamation FF-43-2011 (March 2011) covers SD-commercial fishing operations and covers: harvest limits, areas and trip limits; the NMFS Bottlenose Dolphin Take Reduction Plan prohibits the use of gill nets greater than 5 inches or less than 7 inches stretched mesh at night from November 1 through April 30 in all Atlantic Ocean state waters; the NMFS Bottlenose Dolphin Take Reduction Plan prohibits the use of gill nets, greater than or equal to 7 inch stretched mesh, at night from December 16 through April 14, unless tie downs are used in Atlantic Ocean state waters from the NC/VA border (36° 33’ N) to Cape Lookout (34° 35.4’N); the NMFS Bottlenose Dolphin Take Reduction Plan prohibits the use of gill nets, greater than or equal to 7 inch stretched mesh, at night from December 16 through April 14 in Atlantic Ocean state waters from Cape Lookout to the NC/SC border and requires that such nets be removed from the water at night; the landing prohibition beginning at 6:00 P.M. on February 28, 2011 will allow the Division to review landing reports. Landings for the second harvest period may be adjusted by proclamation if the SD quota has not been taken.

Agency policies are established by the 9-member Marine Fisheries Commission and the Secretary of the Department of Environment and Natural Resources. Three members must be commercial fishermen (including one being a licensed dealer, processor or distributor); three members must be recreational fishermen (including one involved with the sports fishing industry); one member is required to be a fisheries scientist; and two members hold at-large seats.

An example of the activities related to involve the public in the decision making process is the leaflet prepared on the proposed addendum 3 to the ISFMP for SD.¹

Legal Disputes

In the case that parties are not in agreement with a fishery management decision there is the option for legal redress. Some examples (by no means exhaustive) of this are:

- *Sea Watch International et al v. Mossbacher* (alleging serious economic harm from the new ITQ management plan for surf clam and quahog) (Meilander & Sullivan 1999);
- *Alliance against ITQs v. Brown* (1996); sablefish and Pacific halibut fisheries (Meilander & Sullivan 1999);
- *State of Connecticut v. US Department of Commerce* (2005) (the constitutionality of part of the MSA);²
- *Center for Biological Diversity v. Evans*, 2005 WL 1514102 (N.D. Ca. 2005) (The United States District Court for the Northern District of California agreed that NMFS had violated the Endangered Species Act and its own Recovery Plan for the Right Whale by failing to designate critical habitat).³
- In April, 2009 “US District Judge Edward Harrington granted NMFS' motion to dismiss a civil case brought by the states of Massachusetts and New Hampshire; they argued a 2006 regulatory scheme known as Framework 42 was illegal and too restrictive”.⁴
- In 2008, Defenders of Wildlife, The Humane Society of the United States and Ocean Conservancy challenged NMFS's failure to protect and recover the North Atlantic right whale as required by the ESA and the MMPA.⁵

Legal Rights

National Standard 8 states “*conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities*”.

Both the Federal and State FMPs contain extended descriptions of the fishery communities and the economic importance of the SD fishery.

5.2.2 PI 3.1.2: Consultation, roles and responsibilities

National Marine Fisheries Service

NMFS manages fisheries prosecuted between 3 and 200 miles of shore. NMFS is an agency of NOAA. NOAA is in the US Department of Commerce.

¹ NC Division of Marine Fisheries Public Information Brochure for the Atlantic States Marine Fisheries Commission Addendum III to the Interstate Fishery Management Plan for SD
http://www.ncfisheries.net/download/022211_ASMFC_AddIIISpinySDFMP_Feb2010.pdf

² <http://www.ctd.uscourts.gov/Opinions/051805.DJS.Connecticut.pdf>

³ <http://www.meyerglitz.com/wildlife.html>

⁴ <http://www.gloucestertimes.com/fishing/x645322800/Fed-judge-reinstates-fishing-regs/print>

⁵ http://www.defenders.org/newsroom/press_releases_folder/2008/06_26_2008_whale_advocates_file_suit_to_protect_endangered_whales_from_ship_collisions.php

Fishery Management Councils

Introduction

MSA set up 8 RFMCs such as the MAFMC and NEFMC to make recommendations to NMFS. These regional councils have about 18 voting members including fishermen, environmentalists, a NMFS representative, a state representative, a lawyer and other appropriate persons involved in the care, use or management of commercial marine resources in the region. The councils create plans to manage each fishery in the region, and usually have members who represent NMFS, State governments, conservationists, commercial and recreational fishermen, and business people.

The Mid Atlantic Fishery Management Council

Role

MAFMC manages fisheries for summer flounder, scup, black sea bass, bluefish, Atlantic mackerel, short-finned squid (*Ilex*), long-finned squid (*Loligo*), butterfish, surf clams, ocean quahogs, and tilefish. It jointly manages SD and monkfish with the NEFMC. The seven states that comprise the Council are NY, NJ, PA, DE, MD, VA and NC. The Council also works with the ASMFC to manage summer flounder, scup, black sea bass, bluefish, and SD.

Representation

Each State has voting representation on the Council. The Council consists of 25 members (21 voting, 4 non-voting), representing State and Federal agencies and the public. The voting members are the Regional Administrator of the NMFS, a State fisheries official from each State, and thirteen public members nominated by the State Governors and selected by the Secretary of Commerce. Each State is entitled to at least one public member, with the remaining public members appointed at-large. The non-voting members represent the Fish and Wildlife Service (Dept. of the Interior), the US Coast Guard, the State Department, and the ASMFC. A permanent staff, a Scientific and Statistical Committee, and an Advisory Panel are established to support and advise the Council.

Advisory Groups

Advisory groups include advisory panels, fishery management teams, technical teams, the SSC and other committees that provide guidance and advice on issues being considered by the MAMFC. The roles and objectives of these are explained in MAFMC 1989 (last revision 2008).

Committees are: demersal & coastal migratory (fluke, scup, black sea bass, bluefish); SD (joint committee); monkfish (joint committee); squid, mackerel & butterfish; surf clam/ocean quahog & tilefish; ecosystems / ocean planning; executive; law enforcement; protected resources; research set-aside; scientific & statistical; and visioning project.

The SSC has up to 20 members. The Council also appoints industry advisors to work with Council Committees during the preparation of FMPs and amendments.

Advisory Panels consist of recreational and commercial fishermen, charter boat operators, buyers, sellers, environmentalists and consumers who are knowledgeable about fishery issues.

Plan, technical, and fishery management teams are groups which provide objective scientific information about fisheries managed by the Council. They contribute to the development of fishery management plans and amendments, develop analyses, compile abundance forecasts, contribute to Stock Assessment and Fishery Evaluation documents, review models, and conduct other scientific tasks in support of decision making.

Ad hoc committees are created to serve specific functions, usually short-term needs. The committees are disbanded when their tasks are completed.

Public Consultation

The Council meets six times a year and each meeting takes three days. All Council meetings, committee, or advisory meetings are open to the public, except for sessions in which the Council deals with personnel and litigation issues. Transcripts are available on the MAMFC web site. Briefing material prepared for each meeting is available to the public on CD. Public comments and reports must be provided two weeks prior to the start of the Council meeting. Public comment during the meetings is allowed. Stakeholders may also testify at meetings and write; they may also arrange personal meetings with MAFMC staff and members.

Public scoping is done to satisfy requirements under the NEPA. As part of scoping, the Council solicits public comment prior to the development or revision (through amendment or framework adjustment) of FMPs. Comments are solicited on all EISs per NEPA requirements, usually with a 45 day comment period. Public hearings are held to review draft FMPs/amendments/frameworks and solicit public comments prior to final implementation.

New England Fishery Management Council

Members

The NEFMC is made up of eighteen voting members: the Regional Administrator of NMFS; the principal state official with marine fishery management responsibility for ME, NH, MS, RI, and CT; twelve members nominated by the governors of the New England coastal States and appointed by the SOC; and four non-voting members (US Coast Guard, US Fish and Wildlife Service, US Department of State and the ASMFC).

Committees

Oversight Committees meet regularly to review and discuss individual FMPs and develop specific measures that will form the basis of the plan, plan amendment or framework adjustment to an FMP. Oversight committee recommendations are forwarded to the full Council for their approval before inclusion in any draft or final version of an FMP.

Advisory Panels are made up of members from the fishing industry (from both commercial and recreational sectors), scientists, environmental advocates, and others with knowledge and experience related to fisheries issues. They meet separately or jointly with the relevant oversight committee and provide input and assistance in developing management plan measures. Advisors are appointed every three years following a solicitation for candidates. After reviewing applications, the respective oversight committee recommends new or returning advisors. The Council's Executive Committee provides the final approval of advisory panel members.

Plan Development Teams (PDTs) are made up of scientists, managers and other experts with knowledge and experience related to the biology and/or management of a particular species. Individuals serve as an extension of the Council staff. PDTs meet regularly to respond to any direction provided by the oversight committee or Council, to provide analysis of species-related information and to develop issue papers, alternatives, and other documents as appropriate. A member of the Council staff generally chairs each PDT and the team members are from state, federal, academic or other institutions.

Public Consultation

Public comments are accepted at Council meetings on all major agenda items to the extent practicable, and on those items requiring final action. An additional opportunity for public comments is made available at each Council meeting at a designated time listed on the agenda. NEFMC considers public comments at a minimum of two Council meetings before making its recommendations to the NMFS on any framework adjustment to an FMP. Written comments 72 hours before a Council meeting are copied and distributed to the Council prior to the meeting. At

meetings of the Council's oversight committees or other working groups, the extent of public comment is at the discretion of the Chairman or presiding officer.

State Fisheries Management

Introduction

Fisheries prosecuted within three miles of shore are managed by the States. The States organize themselves in different ways to manage their fisheries. Each State on the East Coast is a part of the ASMFC that oversees overall harvest levels and allocations to individual States.

Atlantic States Marine Fisheries Commission

Formation

The ASMFC was formed by the 15 Atlantic coast States in 1942. The Commission serves as a deliberative body, coordinating the conservation and management of the States shared near shore fishery resources for sustainable use. Member States are ME, NH, MA, RI, CT, NY, NJ, PA, DE, MD, VA, NC, SC, GA, and FLA.

Representation

Each State is represented by three Commissioners: the director for the state's marine fisheries management agency, a state legislator, and an individual appointed by the governor. Commissioners participate in the deliberations in the Commission's five main policy arenas: Interstate fisheries management, research and statistics, fisheries science, habitat conservation, and law enforcement.

Responsibilities

As described in the FMP a number of bodies input into the fishery management process (ASMFC 2002; ASMFC 2009). The latter document fully describes the role of each body, their composition and functions:

- The ASMFC approves all FMPs and amendments and makes all final determinations concerning state compliance or noncompliance.
- The Inter State Fishery Management Plan (ISFMP) Policy Board reviews any non-compliance recommendations of the various Management Boards and Sections and if in agreement forwards them to the Commission.
- The SDCSMB is generally responsible for carrying out all activities under the FMP (ASMFC 2000). It establishes and oversees the activities of the PDT or PRT, the Technical Committee and the Stock Assessment Subcommittee, and requests the establishment of ASMFC's SD Advisory Panel. Among other things, the Board makes changes to the management program under adaptive management and approves State programs. The Board reviews the status of state compliance with the FMP or amendment at least annually, and if it determines that a state is out of compliance, reports that determination to the ISFMP. The last minutes available on the ASMFC web site are for the meeting held in August 2010.
- PDTs prepare all documentation necessary for the development of an FMP, amendment, or addendum using the best scientific information available and the most current stock assessment information.
- PRTs are responsible for providing advice concerning the implementation, review, monitoring, and enforcement of FMPs that have been adopted by the Commission, and as needed be charged by the management board/sections. Each PRT meets at least annually or as provided in a given FMP, to conduct a review of the stock status and Commission member states' compliance for which implementation requirements are defined in the FMP. The PRT develops an annual plan review in order to evaluate the adequacy of the FMP. This report addresses, at a minimum: adequacy and achievement of the FMP goals and objectives (including targets and schedules), status of the stocks, status of the fisheries, status of state implementation and enforcement, status of the habitat, research activities, and other information relevant to the FMP.

- The Assessment Science Committee provides guidance to species stock assessment subcommittees, technical committees, and management boards on broad technical issues (e.g., stock assessment methods, biological reference points, sampling targets, and other assessment issues common to multiple Commission-managed species).
- The species stock assessment subcommittee is responsible for stock assessments for use by the PDT in formulation of an FMP, amendment, or addendum; and conducting periodic stock assessments.
- Technical Committees address specific technical or scientific needs requested periodically by the respective management board/section, PDT, PRT, or the Management and Science Committee. Among its duties, a technical committee provides a range of management options, risk assessments, justifications, and probable outcomes of various management options.
- Other Technical Support Subcommittees (e.g., tagging, stocking – with the exception of ISFMP socioeconomic subcommittees) address specific scientific issues important to the assessment and management of the species.
- Advisory Panels assist in carrying out the board's/section's responsibilities. Advisory panels also work with PDTs and PRTs.
- The Habitat Committee reviews, researches and develops appropriate response to concerns of inadequate, damaged or insufficient habitat for Atlantic coastal species of concern to the Commission.
- The Law Enforcement Committee provides information on law enforcement issues, brings resolutions addressing enforcement concerns before the Commission, coordinates enforcement efforts among states, exchanges data, identifies potential enforcement problems, and monitors enforcement of measures incorporated into the various interstate fishery management plans. The program's primary objective is to ensure that the law enforcement provisions of the Commission's fishery management plans are adequate. The program is coordinated through the activities of the Commission's Law Enforcement Committee, which includes law enforcement representatives from the 15 Atlantic coastal States, the District of Columbia, the NMFS, the US Fish and Wildlife Service, and the US Coast Guard.
- The Management and Science Committee provides advice concerning fisheries management and the science of coastal marine fisheries.
- The Committee on Economics and Social Sciences develops and implements mechanisms to make economic and social science analysis a functioning part of the Commission's decision making process.

Stakeholder Input

ASMFC 2009 describes public participation and the need for stakeholders to review and comment upon problems and alternative solutions. A draft FMP, an amendment and its approval, and an emergency action require a minimum of four public hearings, including at least one in each state that specifically requests a hearing. The hearing document is made available to the public for review and comment at least 30 days prior to the date of the first public hearing. Written comments are accepted for 14 days following the date of the last public hearing. Records of the public hearings and summaries of the written comments are made available to anyone requesting them as are summaries of verbal and written comments. Agendas for meetings of the management board/section, the ISFMP Policy Board, or the Commission, as appropriate, are available for public comment prior to the board, section, or Commission taking action on a fishery management issue. Public comments are evaluated and considered prior to deciding what modifications will be made to the draft FMP or amendment, or draft final FMP or amendment, and prior to approval of the FMP or amendment.

Documents are placed on the Council web site¹ for one month requesting public comment and to support public hearings.

Public hearings held to comment on Addendum 3 to the SD FMP were hosted by RI Division of Fish and Wildlife, NY Dept. of Environmental Conservation, NJ Division of Fish and Wildlife, DE Dept. of Natural Resources and Environment Control, MD Dept. of Natural Resources, VA Marine Resources Commission and NC Division of Marine Fisheries.

North East Fisheries Science Center

NEFSC is the research arm of NOAA Fisheries in the region. The Center plans, develops, and manages a multidisciplinary program of basic and applied research to: (1) better understand living marine resources of the Northeast Continental Shelf Ecosystem from the Gulf of Maine to Cape Hatteras, and the habitat quality essential for their existence and continued productivity; and (2) describe and provide to management, industry, and the public, options for the conservation and utilization of living marine resources, and for the restoration and maintenance of marine environmental quality. The functions are carried out through the coordinated efforts of research facilities located in MA, RI, CT, NJ and DC.²

Joint FMPs with Regional Fishery Management Councils

The possibility is open to have a joint FMP with a FMC (ASMFC 2009).

Atlantic Coastal Cooperative Statistics Program (ACCSP)

The ACCSP is a cooperative state-federal program to design, implement, and conduct marine fisheries statistics data collection programs and to integrate those data into a single data management system to meet the needs of fishery managers, scientists and fishermen.

Atlantic Coastal Fish Habitat Partnership

The Atlantic Coastal Fish Habitat Partnership is a geographically-focused and scientifically-based effort to conserve aquatic habitat along the East Coast. Formed under the National Fish Habitat Action Plan, the partnership includes 16 Atlantic coastal States from Maine to Florida with coastal river drainages, as well as federal agencies, Native American tribes, local governments, and non-profit organizations. The partnership's mission is to accelerate the conservation, protection, restoration, and enhancement of habitat for native Atlantic coastal, estuarine-dependent, and diadromous fish.

5.2.3 PI 3.1.3: Long term objectives

National Standards

See above.

MAFMC

The long term objectives which guide decision-making that are consistent with MSC's Principles and Criteria and the precautionary approach are explicit in the National Standards (see above). These standards are not specific to the SD fishery rather they relate to the broader context. The first two national standards (conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the US fishing industry; conservation and management measures shall be based upon the best scientific information available) do not explicitly refer to caution nor the need to adopt the precautionary approach. However, this "omission" is corrected by the MSRA that implicitly established the need for precaution with the

¹ <http://www.asmfc.org/publicInput.htm>

² <http://www.nefsc.noaa.gov/history/nefsc.html>

need to establish ABCs and ACLs that take into account all sources of mortality in the fishery and to stop overfishing and thus prevent stocks from being overfished.

ASMFC

As with the Federal FMC, there does not appear to be any explicit note of the precautionary approach. However, the need to base measures on the best scientific information available would imply that if knowledge is weak, measures still need to be developed.

ASFMC policy is clearly defined and consists of a vision, broad policies, goals strategies and tasks. The implementation of the Strategy is reviewed through annual action plans defined through an Action Plan development cycle involving staff and the Commission. Areas of this considered relevant to this assessment are shown in table 5, with information from the 2011 action plan (ASMFC 2010).

Table 5: ASMFC Action Plan 2011

VISION	
Working towards healthy, self-sustaining populations for all Atlantic coast fish species or successful restoration well in progress by 2015	
BROAD POLICIES	
1. Promote Fisheries Governance. 2. Manage Proactively. 3. Seek Long-term Ecological Sustainability. 4. Create and Strengthen Partnerships. 5. Strive for Transparency and Accountability in all Actions. 6. Set Priorities for the Pursuit and Use of Fiscal Resources. 7. Respond to Member States' Needs.	
GOALS 2009 – 2013	
1. Rebuild and restore depleted Atlantic coastal fisheries, and maintain and fairly allocate recovered fisheries through cooperative regulatory planning. 2. Strengthen cooperative research, data collection capabilities, and the scientific basis for stock assessments and fisheries management actions. 3. Improve stakeholder compliance with Commission fishery management plans. 4. Protect, restore, and enhance fish habitat and ecosystem health through partnerships, policy development, and education. 5. Strengthen congressional, stakeholder, and public support for the Commission's Mission, Vision, and actions. 6. Represent member States collective interests at regional and national levels. 7. Strengthen human resource management and enhance learning and growth within the Commission 8. Provide efficient administration of the Commission's business affairs and ensure the Commission's financial stability	
SELECTED STRATEGIES & TASKS (2011)	
<p>S1.1 Develop and implement new fishery management plans, amendments, and addenda in a timely manner to address the conservation and management needs of Atlantic coastal fishery populations.</p> <ul style="list-style-type: none"> Task 1.1.6 – SD and Coastal Sharks. SD: Establish the specifications for 2011/2012. Continue the development of addendum III to establish state shares for the commercial fishery. Monitor final approval of the MAFMC's Amendment 14 (ACL/AM) and determine if a management response is warranted; Participate in the development of federal Amendment 3 to modify the current allocation of the federal quota. Monitor fishery for consistency with management parameters and state compliance. <p>S1.6 Encourage the use of monitoring programs (e.g., observer programs) to characterize fisheries.</p> <ul style="list-style-type: none"> Task 1.6.1 – Evaluate data collected and observer coverage through the Standard Bycatch Reporting Methodology (SBRM) for ASMFC species. Pursue remedies to address deficiencies in bycatch data. Evaluate link between ACCSP bycatch priorities and SBRM funding. Task 1.6.2 – Develop strategy with state and federal biological sampling programs to achieve efficiencies in sample collection and processing to meet bio-sampling goals and FMP requirements. Task 1.6.3 – Continue to participate in the NRCC Working Group to explore alternative sources of observer funding. <p>S1.7 Document, evaluate, and minimize discards and bycatch in commercial and recreational fisheries.</p> <ul style="list-style-type: none"> Task 1.7.1 – Continue Fishing Gear Technology Work Group evaluations of problematic gears, as resources are available. Focus on gears with the greatest impacts and pursue remedies. Task 1.7.2 – Submit ASMFC changes to existing priorities for at-sea observer coverage for inclusion in the ACCSP FY2012 Bycatch Prioritization Listing. <p>S1.8 Commit to implementing full commercial and recreational catch and landings reporting systems for all species.</p> <ul style="list-style-type: none"> Task 1.8.1 – Work with ACCSP to determine level of catch reporting for each species; determine impacts of status to science and management. Utilize ACCSP catch reporting evaluations to highlight ASMFC species with incomplete catch reporting. 	

S1.9 Evaluate interactions and minimize impacts on protected species.

- Task 1.9.1 – Provide liaison between ASMFC activities and marine mammal take reduction teams and the NMFS National Sea Turtle Strategy.
- Task 1.9.2 – Monitor the potential impacts of ESA listings on ASMFC-related species, including Atlantic and short-nose sturgeon.
- Task 1.9.3 – Work with the Law Enforcement Committee on exchanging information and best practices related to the enforcement of protected and endangered species regulations.

S1.12 Monitor and promote cooperative planning with the Regional Fishery Management Councils, NOAA Fisheries, and other entities.

- Task 1.12.1 – Attend Regional Fishery Management Council meetings as needed and as time is available; participate as a non-voting member and liaison between the Councils and the Commission on matters of mutual interest.
- Task 1.12.2 – Participate on the Northeast Regional Coordinating Council and SEDAR Steering Committee to set state/federal management and assessment priorities.
- Task 1.12.3 – Work with the Regional Fishery Management Councils and the National Marine Fisheries service to improve alignment between state and federal fishery management programs.

S1.13 Promote efficiency and accountability in the Interstate Fisheries Management Program process.

- Task 1.13.1 – Continue to track status of stocks relative to biological reference points to evaluate and drive improvement and results in the Commission’s fisheries management process.
- Task 1.13.2 – Continue to improve the “Meeting Overview” document to increase the efficiency of management board meetings.

S1.15 Strengthen incorporation of stakeholder input into the interstate fishery management planning process, including contributions from advisory panels, environmental organizations, and other interested parties.

- Task 1.15.1 – Engage Atlantic Menhaden, SD, Tautog, American Lobster & South Atlantic Advisory Panels in the development of FMPs & Amend..
- Task 1.15.2 – Continue communication with non-active advisory panels (species in the maintenance mode).
- Task 1.15.3 – Continue to integrate non-traditional constituents into the advisory panel process through the Advisory Panel Oversight Committee.

S2.2 Improve, expand & focus interstate & state-federal cooperative research & statistic programs to support critical scientific & fishery management needs, including the Northeast & Southeast Area Monitoring and Assessment Programs, ACCSP and NOAA Fisheries research program priorities.

- Task 2.2.1 – Coordinate and implement NEAMAP.

S2.3 Strengthen the quality and credibility of Commission stock assessments.

- Task 2.3.7 – Facilitate stakeholder participation in data workshops for use in stock assessments and fisheries management.

S2.4 Develop cooperative programs to address Commission research needs through partnerships with agencies, universities, private research organizations, and stakeholders.

- Task 2.4.1 – Update the annual list of all Commission research needs by species (TC/PRT review); incorporate Socioeconomic and Fish Habitat Research Needs Lists to support Commission FMPs.
- Task 2.4.2 – Participate in meetings of MARFIN, MARMAP, CBSAC, the Cooperative Research Program and ACCSP to review funding proposals and monitor regional research activities to promote member state needs.

S2.7 Provide opportunities for stakeholders to participate in regional assessment processes.

- Task 2.7.1 – Continue to encourage attendance of stakeholders, including advisory panel members, at regional assessment processes.

S2.10 Increase the Commission’s involvement in decisions of how joint state-federal fishery management plan research-set-asides will be used.

- Task 2.10.1 – Develop priority list of projects for review and approval by the appropriate species management boards.

S3.2 Evaluate effectiveness of enforcement and compliance measures of fisheries management programs.

- Task 3.2.1 – Report on the enforceability of existing FMPs as part of the annual compliance review for each species.

S3.3 Enhance communication of enforcement and compliance issues to Atlantic state agencies and other law enforcement programs.

- Task 3.3.1 – Provide a forum to promote interjurisdictional enforcement operations targeting specific fishery resources.

- Task 3.3.2 – Expand efforts to reach out to the law enforcement advisory committees of the regional fishery management councils and interstate commissions to seek opportunities for collaboration and ensure consistent law enforcement strategies.
- S3.5 Develop and implement fishery management measures that include compliance incentives and foster stakeholder buy-in.
- Task 3.5.1 – Identify and explore fishery management measures that maximize stakeholder buy-in.
- S4.1 Effectively protect, restore, and enhance Atlantic coastal fish habitat through fisheries management programs and partnerships, such as the Atlantic Coastal Fish Habitat Partnership (ACFHP).
- Task 4.1.1 – Continue to support the Atlantic Coastal Fish Habitat Partnership (ACFHP) under the direction of the National Fish Habitat Action Plan (NFHAP) Board. ACFHP Steering Committee will report progress at Spring Meeting to the Policy Board.
- S4.2 Identify important habitat areas for Commission-managed species.
- Task 4.2.1 – Finish updating FMP Habitat Sections for American eel, Atlantic sturgeon, American lobster, tautog and other species.
 - Task 4.2.2 – Initiate development of a source document for Atlantic coast threats analysis for priority habitats for Commission managed species for review and use by the States.
 - Task 4.2.3 – Publicize important habitat areas identified for Commission-managed species.
 - Task 4.2.4 – Work with state and federal agencies, the Councils, and NGOs to build on existing efforts to develop a coast wide GIS of fish habitat resources, to identify important fish habitats for Commission managed species.
 - Task 4.2.5 – Assess status and develop strategies for improving implementation of habitat recommendations in current Fishery Management Plans.
- S4.5 Implement performance metrics to focus efforts and monitor progress of the Habitat Program.
- Task 4.5.1 – Review program goals and evaluate accomplishments annually.
- S8.1 Develop, implement, and monitor an annual action plan.
- Task 8.1.1 – Conduct semi-annual reviews of progress under the 2011 Action Plan with the AOC, and report semi-annually to Commissioners concerning progress.

5.2.4 PI 3.1.4: Incentives for sustainable fishing

A number of factors may be considered as providing positive incentives to sustainable fishing.

- The recent changes included in the MSRA that require federal managers to end over fishing and to maintain sustainable harvest of healthy fisheries is intended to provide stability and reduce the uncertainties inherent in marine fisheries.
- The level of scientific research and data on the stocks and the related ecosystem reduces the information gap and consequently the uncertainty facing fishermen. A good example of this is the precaution used to set current SD quotas given the evidence that the biomass will reduce in the short to medium term due to the entry of weak year classes into the SSB.
- The level of stakeholder participation in the management process and the degree to which plans and rules are discussed provide stakeholders with certainty about management objectives while allowing for a participatory approach to management.
- The activities of the ASMFC allow for a unified approach to the management of the fishery to the benefit of fishermen along the coast, with an approach designed to ensure a distribution of harvest opportunities that over the years has become more equitable.

The auditors are not aware of any perverse incentives to the fishing sector that would cause fishermen to harvest on an unsustainable basis. It may be the case that previous policy encouraged over fishing of SD with an implicit “exit” fishery and largely remove the stock in the believe that this would aid the recovery of more commercially valuable groundfish resources.

5.3 Component 3.2

5.3.1 PI 3.2.1 Fishery specific objectives

Federal Waters

See above.

State Waters

See above.

5.3.2 PI 3.2.2: Decision making processes

The decision making process on SD is based on FMPs and results in measures and strategies and there are clear examples of this in the framework amendments and adjustments described above. An example is Amendment 1 to the State FMP (ASMFC) *“Under this current management system for SD, the specification of commercial quotas and trip limits are conducted every year and apply only to the following fishing year. This annual process makes it difficult for industry to set long term business plans and goals. This addendum allows for specification of TALs for the SD fishery in any given year for up to five years. This allows for fishermen to better utilize the quota to meet their fishing needs. Multi-year specifications also allow fishermen to establish strong business plans that are effective in meeting their goals. Multi-year specifications also streamline the administrative and regulatory processes involved in specifying commercial quotas and trip limits for the SD fishery while, at the same time, maintaining consistency with the original SD FMP and federal regulations”*.

This is supported by the definition of annual quotas and trip limits. One part of the decision making process is to consider the commercial implications of increasing quotas or allowing for the possibility of significant inter annual variations in quota and the level of trip limits. The notion is to provide greater stability for fishermen while supporting the market price.

Given the need for the FMP to respond to Laws relating to other elements of the ecosystem this approach takes into account the consequences of decisions on the ecosystem, again as described above.

The level of stakeholder participation leads to the consideration that the process is transparent. One issue is on the timeliness of the decisions – by the nature of the consultative process an extended period of time is needed to introduce adjustments to the Federal FMP.

There is a substantial amount of reporting on the various issues and the process actively seeks to engage stakeholders and explains how the various points of view have contributed to the decisions taken. The Federal FMP contains the written submissions received.

The scoping process provides opportunity for various options for fishery management indicatives to be considered.

5.3.3 PI 3.2.3: Compliance and enforcement

Observers

The Northeast Fisheries Observer Program (NEOP) has coverage from Maine through North Carolina under the legal authority of the MSRA, the MMPA and ESA. NEOP has a contract with an Observer Service Provider – AIS, Inc., and there are two Industry Funded Approved Providers – AIS, Inc. and EWTS, Inc. currently have 93 certified observers who are deployed observers as instructed by the Seaday Schedule and Vessel Selection Lists. Coverage is sufficient to provide statistically reliable bycatch estimates. They use a measure of variability around a particular species group bycatch estimate. Variables used to allocate coverage (based on previous years’ effort): geographic area fished; mesh size; trip length; target species and gear type. The observers cover: vessel and trip information; economic costs; gear characteristics; haul information, environmental conditions; catch composition and disposition; biological sampling; incidental takes (mammals, birds, turtles); and sightings of marine mammals and sea turtles

Federal

NOAA's Office of Law Enforcement (OLE) is charged with enforcing laws.¹ The Northeast Division of OLE services a 19-state area, including the 10 coastal states from Maine through Virginia. NC is covered by the Southeast Division.

NOAA (2010) review of Federal enforcement found “*systemic, nationwide issues adversely affecting NOAA’s ability to effectively carry out its mission of regulating the fishing industry. If not addressed by NOAA’s senior leadership, these issues have the potential to further strain the tenuous relationship that exists in the Northeast Region, and to become problematic in NOAA’s other regions. Fishing laws and regulations are highly complex, making compliance by those in the industry difficult even with the best of intentions*”. General findings were that “*senior leadership and headquarters elements need to exercise substantially greater management and oversight of regional enforcement operations; strengthen policy guidance, procedures, and internal controls in its enforcement operations to address a common industry perception that its civil penalty assessment process is arbitrary and unfair; and reassess the OLE workforce composition to determine if this criminal-enforcement-oriented structure is the most effective for accomplishing its primarily regulatory mission*”. Industry concerns were noted as “*fishing regulations are unduly complicated, unclear, and confusing; NOAA’s regulatory enforcement processes are arbitrary and lack transparency; and NOAA’s broad and powerful enforcement authorities have led to a fisheries enforcement posture that is overly aggressive and intrusive*”.

This evaluation led to a number of recommendations including:

- Ensure NOAA leadership regularly addresses and provides input into enforcement priorities and strategies with regional management, including formal reporting protocols.
- Determine whether NOAA should continue to approach fisheries enforcement from a criminal-investigative standpoint.
- To promote greater transparency, consistency, and oversight: develop and implement an internal operating procedures manual for determining civil penalty assessments and fine settlement amounts; institute higher-level review of civil penalty assessment determinations; and ensure the National Enforcement Operations Manual is current and provides sufficient policy guidance on regulatory and criminal authorities and procedures.
- Ensure follow-through on NOAA Office of the General Counsel for Enforcement and Litigation (GCEL) initiatives intended to foster greater industry understanding of and compliance with complex fishing regulations.
- Develop, implement, and effectively utilize reliable, integrated case management information systems.

As a result of these findings OLE and GCEL have developed an extensive process for setting annual priorities at the national and regional level. Throughout the process, OLE and GCEL will work closely with stakeholders to identify priorities and proposals to address them.

While not strictly related to the SD fishery, a 2007 study by King and Sutinen² outlined how the existing enforcement system in the North East Groundfish fishery does not significantly deter illegal fishing because economic gains from violating fishing regulations are nearly five times the economic value of expected penalties. The study found that only one-third of violators are caught, and only one-third of those are actually prosecuted. Other points made in the report are “*weak enforcement combined with fishermen facing serious economic hardships are leading to widespread violations of*

¹ http://www.nmfs.noaa.gov/ole/ole_about.html

² http://www.redorbit.com/news/science/1700616/illegal_fishing_harming_new_england_groundfish_fisheries/

fisheries regulations along the Northeastern United States coast. This pattern of noncompliance threatens the success of new fisheries management measures put in place to protect and restore fish stocks” and “the study estimates the annual illegal harvest to be 12 to 24 percent, significantly higher than estimates of 6 to 14 percent in the 1980s”.

Concerning SD specifically, in recent years there has been one enforcement action involving the fishery. The case represented a fishing vessel in the EEZ, off the coast of Virginia. The 2007 case is a one count violation. The vessel operator and ownership was cited for fishing in the EEZ without a federal permit. The case was adjudicated/settled and closed. This evidence would suggest two points; firstly the range of activities (observers, vessel trip reports and sales declarations) are an effective deterrent; and secondly, the value of SD is low and provides no incentive to run the risk of fines, loss of gear and loss of license.

State

The Commission’s Law Enforcement Program assists the States in coordinating their law enforcement efforts through data exchange and problem identification. The program’s primary objective is to ensure that the law enforcement provisions of the Commission’s fishery management plans are adequate. The program is coordinated through the activities of the Commission’s Law Enforcement Committee, which includes law enforcement representatives from the 15 Atlantic coastal States, the District of Columbia, the National Marine Fisheries Service, the US Fish and Wildlife Service, and the US Coast Guard.

Each State has its enforcement division.

In 2004 the ASMFC law enforcement committee reviewed the enforceability of the State FMP as it has been implemented in the respective States. Overall there were few problems with the enforcement of SD regulations during the previous twelve months in the States that have a related fishery or where the species is present and a closure is in effect. There have been no unusual cases to report

The lack of observer coverage and limited reporting requirements in State fisheries is a potential source of concern.

The auditors have received an indication of a possible infraction of regulations in the gill net fishery (<http://www.nero.noaa.gov/nero/nr/nrdoc/11/11HarborPorpoiseBycatchUpdate.pdf>). This letter states

- *“Preliminary analyses for the first of two management seasons suggest that harbor porpoise bycatch rates in the Gulf of Maine and Southern New England areas may be above the target rates established for those areas which, if not reduced, could lead to closures to gillnet fishing”.*
- *"A consequence closure" strategy was implemented in 2010 to ensure compliance with HPTRP pinger requirements to reduce harbor porpoise bycatch. Consequence closure areas are specific areas of historically high levels of harbor porpoise bycatch that will seasonally close if the average bycatch rates over two consecutive management seasons in these areas exceed a specified rate. If any of the consequence closure areas are triggered, they will remain in effect until harbor porpoise bycatch levels are significantly reduced or until the Harbor Porpoise Take Reduction Team and NMFS develop and implement new measures”.*
- *If the harbor porpoise bycatch rate in the Mid-Coast Management Area, Massachusetts Bay Management Area, and Stellwagen Bank Management Area combined exceeds 0.031 harbor porpoises per metric tons (which is equivalent to 1 harbor porpoise taken per 71,117 lbs) landed after two consecutive management seasons, the Coastal Gulf of Maine Consequence Closure Area will be closed to gillnet fishing each year during the months of October and November.*
- *If the harbor porpoise bycatch rate for the Southern New England Management Area exceeds 0.023 harbor porpoises per metric tons (which is equivalent to 1 harbor porpoise taken per 95,853 lbs) landed after two consecutive management seasons, both the Cape Cod South*

Expansion Consequence Closure Area and the Eastern Cape Cod Consequence Closure Area will be closed to gillnet fishing each year from February through April”

5.3.4 PI 3.2.4: Research Plan

The 43 rd. SAW (as duplicated in PRT 2009) made a number of recommendations on research and reviewed the achievement of past activities.

1. *“Attempt to allocate landings to statistical area (i.e. attempt proration) using Vessel Trip Report data for 1994 and later years. The Working group successfully completed work to address this RR.*
2. *Evaluate the utility of length frequency for SD sampled in the NEFSC Observer Program in the most recent years (2001 and later). The Working group successfully completed work to address this RR.*
3. *Ensure the inclusion of recent (2000 and later) MADMF Observer sample data for SD in the NEFSC database, for more efficient use in future assessments. The Working group successfully completed work to address this RR.*
4. *Conduct tagging and genetic studies of SD in US and Canadian waters to clarify current assumptions about stock structure. The Working Group reviewed an ongoing tag project conducted by East Carolina University.*
5. *Conduct discard mortality studies for SD, with consideration of the differences in mortality rates among seasons, areas, and gear types. The Working Group reviewed a discard mortality study in North Carolina near-shore trawl and gillnet fisheries conducted by East Carolina University, and took these results into consideration in updating assumed discard mortality rates for the coast-wide trawl, gillnet, and hook fisheries.*
6. *Conduct experimental work on NEFSC trawl survey gear performance, with focus on video work to study the fish herding properties of the gear for species like SD and other demersal groundfish. The Working Group made no progress on this RR.*
7. *Investigate the distribution of SD beyond the depth range of current NEFSC trawl surveys, possibly using experimental research or supplemental surveys. The Working Group made no progress on this RR.*
8. *Initiate aging studies for SD age structures (e.g., fin spines) obtained from NEFSC trawl surveys and other sampling programs. These studies should include additional age validation and age structure exchanges. The WG notes that other aging methodologies (e.g., Canadian studies on radiometry) are also in development. The Working Group reviewed preliminary results of NEFSC aging work for SD. Preliminary results agree more with validated ages for Pacific SD, then with current estimates used for Northwest Atlantic SD.*
9. *Additional analyses of the effects of environmental conditions on survey catch rates should be conducted. The Working Group investigated the associations of temperature and depth with trawl survey densities. Examination of SD distributions in trawl surveys indicates greater concentrations closer to shore over the last five years.*
10. *Additional work on the stock-recruitment relationship should also be conducted with an eye toward estimation of the intrinsic rate of population increase. The Working Group used the results from a new analytical model (LTM) to estimate parameters of a stock-recruitment relationship.*
11. *The SARC noted that the increased biological sampling of SD should be conducted and research trawl surveys. Maturation and fecundity estimates by length class will be particularly important to update. Additional work on the survey database to recover and encode information on the sex composition prior to 1980.*
12. *The Working group notes that a sampling program to collect aging structures (2003) and maturity data (1998) for SD has been implemented on NEFSC surveys. The WG examined sex composition data from NEFSC spring and fall surveys from 1968 to 1972, and this historical information has been included in this assessment.*

New:

1. *Incorporate Canadian commercial fishery sample data into the assessment when it is made available (expected in 2008).*
2. *Conduct an aging workshop for SD, encouraging participation by NEFSC, NCDMF, Canada DFO, other interested state agencies, academia, and other international investigators with an interest in SD aging (US and Canada Pacific Coast, ICES).*
3. *Examine observer data to calculate a weighted average discard mortality rate based on an assumption that the rate increases with catch size.*
4. *Develop experimental estimates of discard mortality in the New England and Mid-Atlantic commercial fisheries.*
5. *Develop experimental estimates of discard mortality in the New England and Mid- Atlantic recreational fisheries.*
6. *Conduct a coast-wide tagging study for SD to explore stock structure, migration patterns, and mixing rates”.*

The MSRA requires that each FMC, with the assistance of its SSC, develop a five-year research priority plan (MAFMC 2010b). To facilitate this process, the MAFMC examined the research needs which have been identified in numerous stock assessments, Council FMP/Amendment documents and through the Council's Research Set Aside Program. In addition, the NE portion of the NMFS Strategic Plan for Fisheries Research and the research needs list which formed the basis for proposed changes to marine recreational fisheries statistics in the US as part of the Marine Recreational Information Program were evaluated. The Council, in consultation with its SSC, identified the top research needs for each of its managed species based on documented research needs contained in the sources described above. In addition, the Council and SSC identified research needs common to all species which are of high priority to address future assessment and fishery management needs.

General research needs were identified as:

- *“Collect accurate size and age composition of commercial and recreational catch (especially the discarded component of the catch) to develop catch at age matrices for all managed stocks; estimate mortality of discards by gear type;*
- *Implement novel supplemental surveys to derive fishery independent indices of abundance;*
- *Develop assessment models to support fishery management control rules for data poor stocks (i.e., use fishery dependent data);*
- *Build the regional capacity within governmental agencies and academia to undertake management strategy evaluations of MAFMC managed stocks to evaluate management performance;*
- *Develop bio-economic models to support fishery management;*
- *Establish a framework for risk analysis of alternative harvest policies;*
- *Incorporate ecosystem level data (predator/prey interactions, trophic dynamics, etc.) into single and multi-species assessment and management models;*
- *Investigate effects of climate change on ecosystems and fisheries they support;*
- *Review and improve capacity for social and economic impact analyses, including updated data on fisheries organization and structure, participation, community linkages; for regular FMP work and at scales appropriate for ecosystem-based management;*
- *Quantify uncertainty in biological reference points”.*

Specific requirements for SD were:

- *“Need to revise the assessment model to investigate the effects of stock abundance, sex ratio and size of pups on birth rate and first year survival of pups;*
- *Initiate a large scale [international] tagging program consisting of conventional external tags, data storage tags, and satellite pop-up tags to help clarify movement patterns and migration rates;*

- Investigate the distribution of spiny dogfish beyond the depth range of current NEFSC trawl surveys, possibly using experimental research or supplemental surveys;
- Initiate aging studies for spiny dogfish age structures (e.g., fin spines) obtained from all sampling programs (include additional age validation and age structure exchanges) and conduct an aging workshop for spiny dogfish, encouraging participation by NEFSC, NCDMF, Canada DFO, other interested state agencies, academia, and other international investigators with an interest in dogfish aging (US and Canada Pacific Coast, ICES): and
- Investigate population genetic structure with emphasis on identifying discreet breeding populations and the extent of mixing”.

As reported by the NOAA Northeast Cooperative Research Program (NCRP) “collaborative fisheries research projects managed through the Northeast Cooperative Research Program are generated from several different sources These projects include research funded through our program contract competitions, projects led by the Northeast Fisheries Science Center, projects developed in response to the region's fishery Research Set-Aside programs, the Study Fleet, and Congressionally-directed cooperative research programs.

Federal funds supporting projects can be distributed through grants, contracts, or cooperative agreements. The Northeast Cooperative Research Program also provides funds to help support collaborative research competitions administered through external partners such as the Northeast Consortium and the Commercial Fisheries Research Foundation.

Since 1999, more than 530 collaborative projects have been supported through the Northeast Cooperative Research Program and its partners. Projects have primarily been distributed from Maine to Virginia, involving hundreds of scientists, fishermen, and students.

Work to date includes more than 130 projects funded through our program contract competitions and 120 projects supported through Research Set-Asides. The majority of these have focused on one of the following areas Industry-Based Surveys (80 projects) to gather information about fish in waters not well-covered by other surveys; Conservation Engineering to find ways to fish more selectively and/or to reduce impacts of fishing on habitat and protected species (135 projects); Ecosystem/Habitat and Resource Dynamics (100 projects) to learn more about the relationships between marine fish and their environment; and Tagging studies (35 projects) to learn more about where and when fish occur and more to better define stocks within species”.

Each year, NMFS solicits proposals for the MAFMC Research Set-Aside Program (RSP). “The Council, in coordination with NMFS and the Atlantic States Marine Fisheries Commission, may set aside up to 3 percent of the total allowable landings (TAL) in certain Mid-Atlantic fisheries to be used for research endeavors. The RSA program provides a mechanism to fund research and compensate vessel owners through the sale of fish harvested under the research quota. Vessels participating in an approved research project may be authorized by the NMFS Northeast Regional Administrator to harvest and land species in excess of any imposed trip limit or during fishery closures. Landings from such trips are sold to generate funds that help defray the costs associated with the approved research projects. No Federal funds are provided for research under this notification”.¹

All reports are available from NCRP.

ASMFC reports² “Accurate and timely fisheries data are critical for effective fisheries management. The Commission’s Science Program works to ensure that the best scientific information available - biological, social and economic - is incorporated into the Commission’s fishery management plans. The program provides a focal point for coordination and improvement of data collection, data

¹ http://www.mafmc.org/press/2011/pr11_01_RSA_2012_RFP.pdf

² <http://www.asmfc.org/>

management, stock assessment, and research activities among state and federal marine resource agencies, and universities on the Atlantic coast". Research takes place in a wide range of activities. For example, ASMFC reports having initiated several projects to assist in minimizing bycatch and discards in fisheries managed by the Commission. These projects include *"development of broad-based options to minimize regulatory discards, participation in federal activities to develop and implement a national bycatch reduction plan, identification of priority fisheries with bycatch problems for incorporation into the Atlantic Coastal Cooperative Statistics Program (ACCSP), and participation in determining funding priorities for collection of bycatch and discard information through the ACCSP"*.

An example of a P# research activity is development of policy issue papers to assist fisheries managers in making broad-based decisions on issues such as individual transferable quotas and cumulative effects of season closures

The 2007 North Carolina Sea Grant sponsored workshop on SD led to the creation of the SD Research Network.¹ The intention with the creation of this network was to develop a loose collaboration of people interested in SD research. The goals of the research network are to increase communication and collaboration among SD research biologists. The benefits will be reduced competition for available finance, increased collaboration and coordination on large scale research projects.

Identified critical research issues are migration patterns, the role of SD in the ecosystem, definitive and validated aging procedures for Pacific and Atlantic N. American SD, comprehensive life history data, location of pupping grounds, use of bycatch data for population models, new technologies (acoustic telemetry, satellite telemetry) and genetic analysis.

In reviewing the appropriateness of the research plan to the needs of the specific fishery under consideration, it must be noted that there are a very wide range of research activities related to retained by-catch species, discarded by catch, ETP species, habitat and ecosystems. While these are not explicitly related to the spiny dogfish fishery, they do provide the information related to the management of the fishery. This information is contained in the FMPs and is taken into consideration when considering the needs for amendments, adjustments and management measures. The results of this research are published in a variety of web sites and in journals.

5.3.5 PI 3.2.5: Monitoring and management performance evaluation

Monitoring and management performance evaluation is on-going. In 1996, the ASFMC was mandated to *"implement a process for the peer review of fish population models upon which fishery management decisions are based."*

As detailed by AFMSC 2002 *"The PRT (Plan Review Team) will monitor the status of the fishery and the resource and report on that status to the SDCSMB annually, or when directed to do so by the Management Board. The PRT will consult with the Technical Committee, the Stock Assessment Subcommittee and the Advisory Panel, if any, in making such review and report. The report will contain recommendations concerning proposed adaptive management revisions to the management program. The SDCSMB will review the report of the PRT, and may consult further with Technical Committee, the Stock Assessment Subcommittee or the Advisory Panel. The Management Board may direct the PRT to prepare an addendum to make any changes it deems necessary. The addendum shall contain a schedule for the States to implement its provisions. The PRT will prepare a draft*

¹ http://www.spinydogfish.org/pb/wp_fc2785e3/wp_fc2785e3.html

addendum as directed by the Management Board, and shall distribute it to all States for review and comment. A public hearing will be held in any state that requests one. The PRT will also request comment from federal agencies and the public at large. After a 30-day review period, the Plan Review Team will summarize the comments and prepare a final version of the addendum for the Management Board. The Management Board shall review the final version of the addendum prepared by the PRT, and shall also consider the public comments received and the recommendations of the Technical Committee, the Stock Assessment Subcommittee and the Advisory Panel; and shall then decide whether to adopt or revise and, then, adopt the addendum. Upon adoption of an addendum implementing adaptive management by the Management Board, States shall prepare plans to carry out the addendum, and submit them to the Management Board for approval according to the schedule contained in the addendum”.

A number of measures are subject to change under adaptive management upon approval by the SDCSMB.¹

Similar conditions apply to the Federal fishery as described in the current dogfish regulations (see box below). Furthermore, this approach is strengthened by the capacity to take within season management actions to “*adjust management measures if they find that action is necessary to meet or be consistent with the goals and objectives of the SD FMP*”. If the conditions merit, emergency actions may be declared,

¹ Overfishing definition; rebuilding targets and schedules; management areas; fishing year and/or seasons; fishing year specification process; annual specifications for total allowable landings; possession limits; seasonal allocation; seasonal allocation proportions; biomedical research set asides; biological research set asides; measures to monitor, control, or reduce bycatch; compliance efficiency; observer requirements; reporting requirements; research or monitoring requirements; size limits; area closures; catch controls; gear limitations; effort controls; state-by-state allocation of the coastwide quota; regional allocation of the quota; allocation of or proportions designated to the components of the regional quota scheme; transferability of quota; regulatory measures for the recreational fishery; recommendations to the secretaries for complementary actions in federal jurisdictions; and any other management measures currently included in the SD FMP.

(a) *Process for setting specifications.* The Spiny Dogfish Monitoring Committee will review the following data at least every 5 years, subject to availability, to determine the total allowable level of landings (TAL) and other restrictions necessary to assure that a target fishing mortality rate specified in the Spiny Dogfish Fishery Management Plan will not be exceeded in each year for which TAL and any other measures are recommended: Commercial and recreational catch data; discards; current estimates of F ; stock status; recent estimates of recruitment; virtual population analysis results; levels of noncompliance by fishermen or individual states; impact of size/mesh regulations; sea sampling data; impact of gear other than otter trawls and gill nets on the mortality of spiny dogfish; and any other relevant information.

(b) *Recommended measures.* Based on this review, the Spiny Dogfish Monitoring Committee shall recommend to the Joint Spiny Dogfish Committee a commercial quota and any other measures including those in paragraphs (b)(1)–(b)(5) of this section that are necessary to assure that the F specified in paragraph (a) of this section will not be exceeded in any fishing year (May 1–April 30), for a period of 1–5 fishing years. The quota may be set within the range of zero to the maximum allowed. The measures that may be recommended include, but are not limited to:

- (1) Minimum or maximum fish sizes;
- (2) Seasons;
- (3) Mesh size restrictions;
- (4) Trip limits;
- (5) Changes to the Northeast Region SBRM, including the CV-based performance standard, fishery stratification, and/or reports; or
- (6) Other gear restrictions.

(c) *Joint Spiny Dogfish Committee recommendation.* The Councils' Joint Spiny Dogfish Committee shall review the recommendations of the Spiny Dogfish Monitoring Committee. Based on these recommendations and any public comments, the Joint Spiny Dogfish Committee shall recommend to the Councils a commercial quota and, possibly, other measures, including those specified in paragraph (b) of this section, necessary to assure that the F specified in paragraph (a) of this section will not be exceeded in any fishing year (May 1–April 30), for a period of 1–5 fishing years. The commercial quota may be set within the range of zero to the maximum allowed.

(d) *Council recommendations.* The Councils shall review these recommendations and, based on the recommendations and any public comments, recommend to the Regional Administrator a commercial quota and other measures necessary to assure that the F specified in paragraph (a) of this section will not be exceeded in any fishing year (May 1–April 30), for a period of 1–5 fishing years. The Councils' recommendations must include supporting documentation, as appropriate, concerning the environmental, economic, and other impacts of the recommendations. The Regional Administrator shall initiate a review of these recommendations and may modify the recommended quota and other management measures to assure that the target F specified in paragraph (a) of this section will not be exceeded in any fishing year (May 1–April 30), for a period of 1–5 fishing years. The Regional Administrator may modify the Councils' recommendations using any of the measures that were not rejected by both Councils. After such review, NMFS shall publish a proposed rule in the *Federal Register* specifying a coastwide commercial quota and other measures necessary to assure that the F specified in paragraph (a) of this section will not be exceeded in any fishing year (May 1–April 30), for a period of 1–5 fishing years. After considering public comments, NMFS shall publish a final rule in the *Federal Register* to implement such a quota and other measures.

6 ECOSYSTEM CHARACTERISTICS

6.1 Introduction

There are five components relation to Principle 2 in an MSC assessment that considers the impact of a fishery on other elements of the ecosystem:

1. Retained species: Species that are retained in the fishery under assessment;
2. Bycatch species: Organisms that have been taken incidentally and are not retained;
3. ETP species: Endangered, threatened or protected species are those that are recognised by national legislation and/or binding international agreements (e.g. CITES) to which the jurisdictions controlling the fishery under assessment are party;
4. Habitats: The habitats within which the fishery operates; and
5. Ecosystem: Broader ecosystem elements such as trophic structure and function, community composition, and biodiversity.

To minimize the possibility of duplicate scoring, any single species is only considered within retained species or bycatch species or ETP species components.

Under each of these five components, there are three PI: an Outcome PI that considers the status of the impact or the risk that the fishery poses to that component; a management strategy PI that considers the basis, reliability and implementation of the management strategy for the component; and an information PI that considers the nature, extent, quality and reliability of the monitoring and information that is relevant to (i) developing and implementing the management strategy and (ii) measuring the outcomes of the strategy.

SD is caught both in a directed fishery and as a by catch in fisheries for other species or groups of species. Accordingly, the components related to retained species and by catch species are required to consider the other species taken in both types of fishery; so for example if SD is taken as a by-catch in the herring trawl fishery, landed herring must be considered as a retained species.

6.2 Characterization of SD Fisheries as Direct or By Catch

Fishing effort undertaken by trawlers, gillnetters and long liners is in various fisheries that are covered by a number of FMPs including the IFMP for SD (ASMFC 2002), the SD FMP (MAFMC and NEFMC 1999), the Northeast Multispecies FMP, the Monkfish FMP, the Atlantic mackerel, squid and butterfish FMP, the North East Skate complex FMP, herring FMPs for state and federal waters and the Bluefish FMP.

In most fisheries, when a fishing vessel hauls out, the target fishery has to be declared. But this is not the case with SD. Because of this, it is not possible to differentiate with any certainty between the retained or discarded bycatch of a directed SD fishing effort and where SD has been taken as a retained or discarded by catch in another directed fishery. Even after a trip is complete, it is not possible to determine which species were caught as a result of targetting SD as opposed to being caught in the directed fishery for another species or group of species which resulted in a by catch of SD, as on a specific fishing trip some sets may have been directed on SD while others would have been directed on other species.

Following the introduction of management measures including trip limits to recover the stock and a low market value, over the past decade, the harvest of SD mainly resulted from opportunistic sets (long line and gill net) or bycatch (trawl), although this situation is now changing with higher quotas and trip limits.

To identify the nature of the fishing effort and the extent to which SD may have been a directed or bycatch fishery, the consultants identified the differences in the relative importance of SD by trip for each of the three gears (figure 21). The data illustrate the cumulative contribution to annual SD

landings (2005 – 2010) for the three gear types as a function of the proportion of SD in trip-level landings.

Results show:

- **Longline.** SD contributes to a large proportion of total landings and this suggests that this is primarily a directed fishery. In 2005, fishing trips where SD accounted for 90 % or more of the total trip landings accounted for 30 % of the total landings of SD by that gear. In 2010, this latter proportion had increased to almost 100 %.
- **Trawl.** The trawl fishery demonstrates a relatively linear accumulation of landings such that the proportion of SD in the catch is almost random. In 2005, fishing trips where SD accounted for 10 % of the total trip landing accounted for 80 % of the total landings of SD by that gear; the respective figure for 2010 was about 93 %. This is not consistent with a directed fishing, but the accumulation of incidentally captured SD i.e. the species is taken as a by-catch in another fishery.
- **Gillnet.** The gillnet fishery displays a pattern between the other two indicating a likely mix of directed, probably opportunistic, and incidentally caught SD contributing to overall landings. In 2005, fishing trips where SD accounted for 30 % of the total trip landing accounted for about 45 % of the total landings of SD by that gear; the respective figure for 2010 was about 90 %.

These patterns fit with our knowledge of the fishery gained from stakeholder interviews. Long line vessels target SD as they are able to be profitable with the trip limit harvested in inshore waters. Due to the low cost and the low trip limit, it is not financially viable for trawlers to target SD, rather they take the species as a by catch and retain the SD harvested towards the end of a fishing trip (SD caught at the beginning of a trip cannot be maintained at optimal quality). Gill netters will opportunistically set for SD at the end of a trip if they identify its presence, as earnings from the catch contribute to the total costs of a trip with a limited marginal cost in undertaking the activity. The increase in the proportions noted above for most recent years is due to higher trip limits (which went from 600 lbs. in 2005-2008 to 3,000 lbs. in 2009-2010) allied with the greater abundance of the species.

6.3 Retained and Bycatch Species

6.3.1 Main Species

Paragraphs 7.2.2 and 7.2.3 of the MSC FAM state: “Both SG60 and SG80 use the qualifier ‘main retained species’. ‘Main’ in this context is intended to allow consideration of the weight, value or vulnerability of species caught. For instance, a species that comprises less than 5% of the total catch by weight may normally be considered to be a minor species, i.e., not ‘main’, in the catch, unless it is of high value to the fisher or of particular vulnerability, or if the total catch of the fishery is large, in which case even 5% may be a considerable catch. On the other hand a species that normally comprises 20% or more of the total catch by weight would almost always be considered a ‘main’ retained species. Assessment Teams shall use their expert judgement to determine and justify in writing which species are considered ‘main’ and which are not’ and “SG100 does not include the qualifier ‘main’ and all retained species are included in the assessment. If there are no Principle 2 retained species in the fishery, or retention is exceptionally rare and negligible in its impact, then the fishery would meet SG100”. The same approach is outlined for bycatch species in paragraph 7.3.2 of the MSC FAM.

6.3.2 Catching Patterns

The predatory nature and shoaling behaviour of SD (i.e. other species are generally not found in the area where SD congregates) must be considered when assessing the potential for retained catch and bycatch in the SD directed fishery. Bycatch in targeted SD gill net and long line fisheries will largely be a function of soak time, which, as noted in section 3.2., is usually as short as 1 to 2 hours. This limits the potential for by-catch.

It is understood that a trawl takes SD as a bycatch when it trawls through a shoal of SD; it is not that the SD is mixed with the target species.

Figure 21: Total annual landings of SD as a function of the proportion of SD in trip level landings by gear

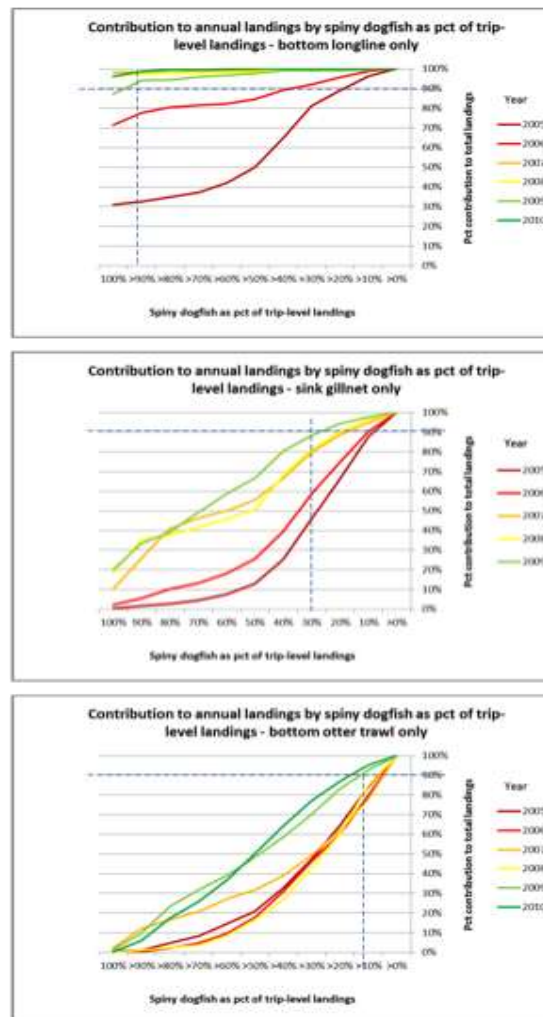


Figure 1. Total annual landings of spiny dogfish as a function of the proportion of dogfish in trip-level landings by gear type. Source: Vessel Trip Reports.

Source: Compiled from VTRs (James Armstrong, MAFMC, pers. comm.)

6.3.3 Bait Species

The long line fishery for SD uses an assortment of species to bait hooks, the number of which depends on the trip limit. The current trip limit is 3,000 lbs and this may be caught using 2 to 3 bundles of long line; with bait use of 12 to 15 lbs per bundle it is estimated that 30 to 35 lbs of bait are needed (i.e. up to 0.5 % of the catch weight). A single squid or herring can bait 5 to 7 hooks. Bait species vary, but are mainly squid and herring. Squid has better CPUE (it does not fall off the hook easily) but costs more per pound. Herring has lower CPUE (it often falls off the hook) but costs less per pound. Herring is caught locally, as is most squid.

6.3.4 Identified Main, Vulnerable or Valuable Species

Data Set

Data from observed trips in 2009 were used to identify the species composition of the SD fishery (Table 6). The table identifies the other species harvested and either retained or discarded when SD was caught in a directed fishery or as a by-catch in a fishery directed at another species or group of fisheries. Although, as pointed out above, it is reasonable to conclude that there is limited other catch in a SD directed fishery, given that information is not available to differentiate between when SD was the targeted species and when it was taken as a by-catch, it is assumed that the catch composition is the same in both types.

Retained Species

Long Line

75.3 % of the total catch when SD is taken in long line trips is retained. The main part of this is SD, but 14.4 % of the total catch is retained haddock which is considered a main species. Due to the most recent stock assessment for the Gulf of Maine stock, Atlantic cod may be considered a vulnerable species but at 2.2 % of the total catch it has not been taken into consideration. No bait species is considered a main species.

Gill net

80.0 % of the total catch when SD is taken by gill net is retained. The main species identified are winter skate (12.4%), Atlantic cod (12.0%) and pollock (6.3%). None of the other retained species are considered to be vulnerable or of high value.

Trawl

86.9 % of the total catch when SD is trawl caught is retained. There are two main species – herring (44.4%) and mackerel (23.4 %). None of the other retained species are considered to be vulnerable or of high value.

Discarded Species

Long line

There are no main discarded species. Lobster may be considered valuable but at 0.4% of the total catch has not been taken into consideration. While Barndoor skate (0.4%) may be considered vulnerable (it was one of the four skate species that were petitioned to be listed under the ESA (Purtle 2011)), the low level of catch (0.4%) means that it has not been taken into consideration. Similarly, lobster (0.4%) is valuable but not considered.

Gill net

There are no main discarded species. Atlantic cod (1.40 % of the total catch), Winter skate (0.59 %) and Barndoor skate (0.29 %) (two of the four skate species that were petitioned to be listed under the ESA (Purtle 2011)), may be considered vulnerable but the low level of catch means that they have not been taken into consideration.

Table 6: Retained & Discarded Species in Observed Fishing Trips Recording Catches of Spiny Dogfish: 2009

TRAWL			GILLNET			LONGLINE		
SPECIES	Lbs	% TOTAL	SPECIES	Lbs	% TOTAL	SPECIES	Lbs	% TOTAL
DISCARDED		13.14%	DISCARDED		20.00%	DISCARDED		24.7%
FISH, NK	127,401	2.91%	DOGFISH, SPINY	92,165	14.68%	DOGFISH, SPINY	32,250	21.5%
SKATE, LITTLE	96,560	2.20%	COD, ATLANTIC	8,784	1.40%	HADDOCK	1,184	0.8%
DOGFISH, SPINY	96,306	2.20%	LOBSTER, AMERICAN	4,968	0.79%	LOBSTER, AMERICAN	658	0.4%
SKATE, WINTER (BIG)	38,702	0.88%	SKATE, WINTER (BIG)	3,700	0.59%	SKATE, BARNDOR	650	0.4%
HAKE, RED (LING)	29,209	0.67%	RAVEN, SEA	2,370	0.38%	RAVEN, SEA	398	0.3%
HAKE, SILVER (WHITING)	17,919	0.41%	FLOUNDER, SUMMER (FLUKE)	2,111	0.34%	OTHER SP (21)	1,988	1.3%
SPONGE, NK	14,985	0.34%	SKATE, LITTLE	1,958	0.31%	RETAINED		75.3%
SCUP	13,962	0.32%	SKATE, BARNDOR	1,821	0.29%	DOGFISH, SPINY	85,375	56.9%
BUTTERFISH	13,098	0.30%	MONKFISH (ANGLER, GOOSEFISH)	1,473	0.23%	HADDOCK	21,576	14.4%
COD, ATLANTIC	11,952	0.27%	OTHER SP (56)	6,239	0.99%	COD, ATLANTIC	3,344	2.2%
FLOUNDER, YELLOWTAIL	10,977	0.25%	RETAINED		80.0%	FLOUNDER, WINTER (BLACKBACK)	1,320	0.9%
SKATE, BARNDOR	10,108	0.23%	DOGFISH, SPINY	238,588	38.0%	OTHER SP (9)	1,392	0.9%
FLOUNDER, SUMMER (FLUKE)	8,233	0.19%	SKATE, WINTER (BIG)	77,692	12.4%	TOTAL OBSERVED CATCH	150,135	100.0%
FLOUNDER, FOURSPOT	6,978	0.16%	COD, ATLANTIC	75,272	12.0%			
FLOUNDER, WINTER (BLACKBACK)	6,943	0.16%	POLLOCK	39,260	6.3%			
LOBSTER, AMERICAN	6,311	0.14%	MONKFISH (ANGLER, GOOSEFISH)	26,755	4.3%			
OTHER SP (73)	65,849	1.50%	BLUEFISH	21,341	3.4%			
RETAINED		86.86%	SKATE, NK	5,572	0.9%			
HERRING, ATLANTIC	1,944,422	44.39%	HAKE, WHITE	5,458	0.9%			
MACKEREL, ATLANTIC	1,025,171	23.40%	OTHER SP (34)	12,492	2.0%			
HAKE, SILVER (WHITING)	173,686	3.96%	TOTAL OBSERVED CATCH	628,016	100.0%			
FISH, NK	136,000	3.10%						
DOGFISH, SPINY	105,916	2.42%						
SKATE, LITTLE	53,822	1.23%						
HADDOCK	45,642	1.04%						
SQUID, ATL LONG-FIN	40,519	0.92%						
OTHER SP (62)	279,854	6.39%						
TOTAL OBSERVED CATCH	4,380,525	100.00%						

Note: In that table, the term “hook and line” refers to all gear reported in the “LL” tables in the observer database. These tables contain observed trips using hook gear. In fishing year 2009, these observed trips were predominantly bottom longline (N = 877), secondarily pelagic longline (N = 100), and also included a few hand line (N = 58) and troll line trips (N = 7). The “hook and line” gear used to land spiny dogfish in FY2009 was primarily bottom longline (79.7%), secondarily hand line (20.3%) (Pers. Com. Jim Armstrong February, 2012)

Source: MAMFC

Trawl

There are no main discarded species. Apart from Little skate (2.20 %) all other species account for less than 0.7% of the total catch. Atlantic cod (0.27 %), Winter skate (0.16 %) and Barndoor skate (0.23 %) (two of the four skate species that were petitioned to be listed under the ESA (Purtle 2011)) may be considered vulnerable, but the low level of catch means that they have not been taken into consideration.

6.4 Retained Species

6.4.1 Outcome

Long line

Haddock

In the northwest Atlantic, Haddock (*Melanogrammus aeglefinus*), is distributed from Cape May, New Jersey to the Strait of Belle Isle, Newfoundland with a total of six distinct identified haddock stocks. Two of these haddock stocks are found in U.S. waters: Georges Bank (GB) and Gulf of Maine (GoM).

Concerning stock status, Framework 44 (NEFMC 2010d) concluded:

- “Based on the current assessment, the GOM haddock stock is not overfished and overfishing is not occurring”; and
- “The GB haddock stock is a trans-boundary resource, which is co-managed with Canada. Substantial declines have recently occurred in the weights at age due to slower than average growth, particularly of the 2003 year-class. This is affecting productivity in the short-term. The growth of subsequent year-classes is returning to the earlier rates. The stock is not overfished and overfishing is not occurring”.

A summary of the Seafood Watch Haddock report updated in September, 2010 was “The GB biomass is at 199% of BMSY and overfishing is not occurring, but distribution parameters are skewed, with reduced age at maturity due to fishing. Therefore, this stock is considered a moderate conservation concern according to Seafood Watch. The GOM stock has a biomass at 99% of BMSY and overfishing is not occurring, deeming it to also be a moderate conservation concern according to Seafood Watch”. A Seafood Watch up-date of January, 2011¹ noted “Haddock was overfished for years, but improved management ended overfishing in 1995, and stocks are now fully recovered”.

Gill Net

Winter Skate

As described by Purtle (2011) in the submission to have four skate species listed under the U.S ESA:

- Winter skates “occur from the south coast of Newfoundland and the southern Gulf of St. Lawrence to Cape Hatteras. They are found at depths ranging from shoreline to 371 m, but most are observed in water less than 111 m deep. At least some population segments appear to undergo a local seasonal migration, moving to shallower waters in autumn and to deeper waters in summer. Winter skates are typically only found on sand and gravel substrata; in fact, one study suggests that substratum type is a better determinate of winter skate distribution than depth. Winter skates have been observed in temperatures ranging from -1.2 °C to 19 °C, although they appear to prefer water at temperatures between 5 and 9 °C.
- “The IUCN has designated winter skates as “Endangered” throughout their range. The IUCN designates a species as “Endangered” “when the best available evidence indicates that it [is]...considered to be facing a very high risk of extinction in the wild.” In listing the winter skate

¹ http://www.montereybayaquarium.org/cr/cr_seafoodwatch/content/media/MBA_SeafoodWatch_Updates_biyearly.pdf

as “Endangered,” the IUCN notes a greater than 90% decline in the species’ abundance in two major geographic areas, its general decline in U.S. waters, and the uncertainty surrounding the causes of these declines.

- The NEFSC declared winter skates are “overfished” in 2007. Although the most recent survey indicates that winter skates are not currently subject to “overfishing,” as defined in the FMP, the three-year moving average of the winter skate biomass index has declined steadily over the past decade, and declined 4% between 2004-2006 and 2005-2007. Moreover, the effects from directed take for wings and as bait, combined with bycatch mortality from trawling, have lead to a dramatic decline in the winter skate population: 62% of the New England population has been lost since the 1980s.
- “There is currently no prohibition on the landing or discard of winter skates in U.S. waters. On the contrary, the skate wing trade targets winter skates, and as much as 95% of the annual wing catch consists of winter skates. The NEFSC determined the winter skate population was “overfished” in 2007; the species’ biomass is currently only 38% of the peak biomass observed during the 1980’s. Although the winter skate biomass index continues to decline, the NEFSC survey has determined that it is not currently subjected to “overfishing.” Tellingly, the biomass of winter skate has declined “substantial[ly]” since implementation of the FMP in 2003”.

Karp (2012) reports that on the basis of NEFSC Bottom Trawl Survey data through autumn 2011/spring 2012 “for winter skate, the 2009-2011 NEFSC autumn average biomass index of 8.69 kg/tow is above both the biomass threshold reference point (2.83 kg/tow) and the Bmsy proxy (5.66 kg/tow), and thus the species is not overfished and is above Bmsy. The 2009-2011 average index is below the 2008-2010 index by 10%, but overfishing is not occurring as this decline is not more than 20%”.

Atlantic cod

In US waters, cod are assessed and managed as two stocks: GOM, and GB and southward. Both stocks support important commercial and recreational fisheries. Commercial fisheries are conducted year round, primarily with otter trawls and gill nets. Recreational fishing also occurs year round; peak activity occurs during the late summer in the lower GOM and during late autumn to early spring from Massachusetts southward (Mayo & O’Brien 2006).

Georges Bank Stock: Resource productivity is currently poor due to low recent recruitment and low weights at age compared to the 1980s (TRAC Status Report 2010/03). While management measures have resulted in a decreased exploitation rate since 1995, fishing mortality has remained above FREF and adult biomass has fluctuated without any appreciable rebuilding. The continuing poor recruitment since the early 1990s is an important factor for this lower productivity. The 2003 year-class made the largest contribution by weight to the 2009 fishery and population biomass, and was projected to continue to be an important component in the fishery catch biomass in 2010 (>25% of the catch) and to a lesser extent in 2011 (between 16% and 18% of the catch). With the passing of the 2003 year-class through the population, rebuilding will not occur without improved recruitment. Catches since 2005 have been between 1,300 mt and 1,900 mt.

Gulf of Maine stock: GOM cod was assessed in 2008 and 2011. The 2008 results indicated that the stock was rebuilding and prospects were good for full recovery by 2014. Annual catch targets and allowable catch limits were set accordingly. The 2011 assessment, however, indicates that the stock was much smaller in 2007 than the 2008 assessment showed, that it was not rebuilding on schedule at that time, and that in 2010 the stock was about 20% of its fully-rebuilt size and fishing rates were nearly five times the overfishing level.¹ The stock is overfished and overfishing is occurring,

¹<http://www.nero.noaa.gov/nero/hotnews/gomcod/2011%20Gulf%20of%20Maine%20Cod%20Baseline%20Assessment%2012-08-11.pdf>

rebuilding by 2014 is not possible; under the best conditions it could get there by around 2018 but under worst, it will be later than 2020. Recreational catches (both landings and discards) have increased substantially over the last 15 years. Over the past ten years recreational catches have exceeded 30% of the total catch of GOM cod. As stock abundance has decreased over time, the distribution of the stock has contracted to a much smaller area compared to its distribution in the 1970s. Similarly, the fishery has also undergone a general contraction over the past twenty years and is now operating primarily in the western GOM. Because of this contraction, catch per unit effort in the fishery has remained high, despite a large decline in overall stock abundance.

Pollock

Pollock, *Pollachius virens*, is assessed as a unit stock from the eastern Scotian Shelf to GB and GOM. The Seafood Watch Seafood Report on the species published in December, 2010 noted that the biomass of pollock in the US fishery is above its target reference point and overfishing is not occurring and accordingly it concludes that the stock is healthy. An up-date of January, 2011 concludes “*In the U.S. .. Atlantic pollock is abundant and the fisheries are well-managed*”.

In May, 2011 the Gulf of Maine Research Institute reported that “*according to the updated biological reference points and analysis utilized in the 2010 50th Northeast Regional Stock Assessment Workshop (50th SAW), Atlantic pollock is not overfished ($SSB > \frac{1}{2} SSBMSY$). In addition, this most recent assessment also determined that overfishing of pollock is not occurring ($F < FMSY$), based on data from the 2009 fishing year*”.

Trawl

Herring

In the western North Atlantic, herring (*Clupea harengus*) are found in coastal and continental shelf waters from Labrador to Cape Hatteras, North Carolina. Herring migrate in schools to areas where they feed, spawn, and spend the winter

Until the late 1950s, annual harvests averaged 60,000 mt. Foreign fleets entered the fishery off the USA in the mid-1900s and heavily fished the herring resource, with harvests peaking at 470,000 mts in 1968. Combined with herring’s natural population changes, these excessive, unsustainable harvests led to a collapse of the offshore herring fishery in the 1970s.

Atlantic herring has recovered substantially from the very low levels of the 1970s and is now harvested sustainably. Scientists estimate the Atlantic herring population in the GOM GB herring stock complex is at 97 % of the target population level. 2008 abundance estimates were 651,700 mt, which is slightly below the target level of 670,600 mt. Estimated F in 2008 was 0.14; below $FMSY$ of 0.27 (TRAC 2009).

Mackerel

In the western Atlantic, Atlantic mackerel *Scomber scombrus* are found from Labrador to North Carolina. Atlantic mackerel are common in cold and temperate waters over the continental shelf. They swim in schools near the surface, and travel to and from spawning and summering grounds.

The mackerel stock was assessed by TRAC in early 2010, which was the first official joint assessment of Atlantic mackerel by the U.S. and Canada. Given the uncertainty in the assessment results, the TRAC agreed that characterization of stock status relative to model output reference points would not be appropriate. Given current indications of reduced productivity and lack of older fish in the survey and catch, TRAC recommended that annual total catches not exceed the average total landings (80,000 mt) over the last three years (2006-2008) until such time that new information suggests that a different amount is appropriate. The recommendation was based on the 2006-2008 total U.S.+ Canadian average landings. This could potentially form the basis of an OFL specification. The 2006-2009 four year average is 75,711 mt and the 2007-2009 three year average is 63,567 mt. The TRAC chose the years 2006-2008 primarily because the TRAC did not want to go too far back where the average would be significantly higher and therefore potentially less representative of the

productivity of the stock in recent years (MAMFC 2010).

NOAA scientists have found that environmental factors have changed the distribution patterns of Atlantic mackerel that migrates great distances on a seasonal basis to feed and spawn, and are sensitive to changes in water temperature. These findings could have significant implications for U.S. commercial and recreational mackerel fisheries that mostly occur during late winter and early spring.¹

6.4.2 Management

Winter Skate

Winter skate is managed as part of the NE Skate Complex Management Plan. The Northeast complex includes seven species: winter skate, barndoor skate, thorny skate, smooth skate, little skate, clear nose skate, and rosette skate.

“The primary objectives of the Skate FMP are to: (1) protect the overfished species of skates and increase their biomass to target levels specified in the FMP while preventing overfishing of the other skate species and (2) collect information critical for improving knowledge of skate fisheries by species and for monitoring the status of skate fisheries, resources, and related markets, as well as the effectiveness of skate management approaches. The FMP includes reporting requirements to improve fishery information; prohibitions on overfished species, a trip limit for the skate wing fishery, and mechanisms for FMP monitoring and plan adjustments. Importantly, through the establishment of a “baseline” of management measures in other fisheries, the FMP recognizes the interactions of skates with the groundfish, scallop and monkfish fisheries.” (<http://www.nefmc.org/skates/index.html>)

The regulations, restrictions and management measures are summarized in the NE Skate Fishery Information Sheet (<http://www.nefmc.org/skates/index.html>). Possession or landing of barndoor and thorny skates is prohibited throughout the Skate Management Area. In addition, possession of landing of smooth skates from the Gulf of Maine Regulated Mesh Area is prohibited.

Atlantic Cod, Haddock and Pollock

The North East Multispecies Fishery Management Plan (NEMSFMP) covers 13 species (a total of 20 stocks) including cod (GOM & GB), haddock (GOM & GB) and pollock.

The NEMSFMP was implemented in 1986 to reduce the F of heavily fished groundfish stocks and promote their rebuilding to sustainable biomass levels. Tools used included seasonal and year-round area closures, gear restrictions (mesh sizes, number of nets/hooks, etc.), minimum sizes for fish by species, trip limits, limited access to a certain number of boats, and restrictions on the annual number of days a vessel was allowed to fish for groundfish (days-at-sea (DAS)). Over the intervening years this FMP has been modified by a series of amendments and framework adjustments.

In 2006, MSRA was passed, updating the original Act (MSA) and the SFA. Key changes included a firm deadline to end overfishing by 2011. Tools to be implemented to achieve this were: Annual Catch Levels (ACLs) and a Limited Access Privilege Program (LAPP) provision. The former must be set at or below the Acceptable Biological Catch (ABC) of the fishery as recommended by the Scientific and Statistical Committee (SSC), and the ACL cannot exceed the SSC’s recommendation for ABC. In addition Accountability Measures (AMs) detail what actions will be taken in the event of an overage of harvest level. The latter consists of a Federal permit issued as part of a limited access system to harvest a defined share of the ACL.

On 1 May 2010, a new management program, Amendment 16 to the NEMSFMP was implemented to comply with the requirements of the MSRA. This amendment introduced two main changes. Firstly, “hard quota” annual limits on the TAC for all of the 20 stocks in the groundfish complex were

¹ http://www.nefsc.noaa.gov/press_release/2011/SciSpot/SS1104/

introduced. Secondly, the use of fishing sectors was extended strengthening the concept of improved management through the introduction of quasi- property rights. Groups of fishing vessels (sectors) are each allotted a share (quota) of the total annual groundfish TACs were based on the historical fishing of individual member boats. Sectors received quota for 9 of 14 groundfish species in the FMP and became exempt from many of the effort controls such as multispecies DAS limitations. Fishermen who chose not to belong to a sector operate under a common pool that maintains the traditional management tools of DAS and trip limits.

Herring¹

ASFCM coordinates management of the herring fishery in state waters, and NEFMC manages the fishery in federal waters. The two entities develop their regulations in close coordination. Individual states are responsible for implementing regulations recommended by the ASFCM, and NOAA Fisheries is responsible for implementing regulations recommended by NEFMC.

Current management provides for:

- An annual catch limit for the entire herring fishery based upon scientific information on the status of the stock. Managers divide the catch limit into four area-specific limits. When an area-specific limit is reached, the directed fishery in that area is prohibited, and only incidental catches of herring are allowed.
- A limited access permit program that limits the number of vessels that can participate in the directed fishery for herring. Vessels that do not qualify for a limited access permit can be issued an open access permit, allowing them to harvest a small amount of herring (6,600 pounds) per day or per trip.
- Limits on the amount of herring a vessel can possess in one day or on one trip, depending on the type of permit.
- The Interstate Fishery Management Plan for Atlantic Herring contains measures that close areas to herring fishing when herring are spawning.

Mackerel

MAFMC has responsibility for management of this species which is covered in the Atlantic Mackerel, Squid and Butterfish (MSB) FMP. The individual MSB FMPs were adopted by MAMFC in 1978 and were subsequently approved by NMFS in 1979. The MAFMC began work to merge them into a single FMP in 1980 and this was implemented by in 1983. Since then the FMP has been amended 10 times.

The objectives of the MSB FMP are to: enhance the probability of successful (i.e., the historical average) recruitment to the fisheries; promote the growth of the U.S. commercial fishery, including the fishery for export; provide the greatest degree of freedom and flexibility to all harvesters of these resources consistent with the attainment of the other objectives of this FMP; provide marine recreational fishing opportunities, recognizing the contribution of recreational fishing to the national economy; increase the understanding of the conditions of the stocks and fisheries; and minimize harvesting conflicts among US commercial, US recreational and foreign fishermen.

Amendments 11, 13, and 14 to the MSBFMP will cap capacity in the Atlantic mackerel fishery, implement Annual Catch Limits and Accountability Measures and consider catch shares for the squid fisheries as well as bycatch of river herrings and shads in the MSB fisheries (MAMFC 2010).

6.4.3 Information

The six main species are assessed regularly and reported in Science Advisory reports (SAW-SARC documents). In addition, NOAA Fisheries produces regular reviews of fish stock status, as well as an

¹ http://www.fishwatch.gov/seafood_profiles/species/herring/species_pages/atl_herring.htm

index of the overall performance through the FSSI score. These are updated quarterly and available at <http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm>.

Bycatch in NE Region fisheries is monitored primarily through the Northeast Fisheries Observer Program (NEFOP). The Fisheries Observer Program is coordinated through the NEFSC and has been in operation since 1989. The quality of observer information is ensured through several aspects of the program: observers participate in a comprehensive training program that includes proficiency and testing standards; a standardized set of on-board data collection protocols are utilized in training and are available at-sea in written reference documents; and finally, significant auditing and quality assurance of the data collected occurs before it is used in stock assessment and management decisions (MAFMC & NEFMC 2007).

The Federal Vessel Trip Reports (FVTR) data represent a comprehensive source of information on total fishing effort, location, catch, and bycatch (MAFMC & NEFMC 2007). Other components of the bycatch monitoring include fishery independent surveys, dealer purchase reports, port sampling (commercial), recreational fishery sampling, industry-based sampling, fleet studies, digital video cameras, the alternate platforms program, the stranding networks, the VMS program, and the use of trawl monitoring devices (MAFMC & NEFMC 2007).

Recent amendments to the bycatch reporting methodology are explained in MAFMC & NEFMC 2007. For practical reasons, the program operates on the basis of fishing modes where a fishing mode is defined according to the fishing gear used and the area from which the vessels depart, rather than by FMPs. MAFMC & NEFMC 2007 reports that *“while the FMP works very well as the operational unit for devising and implementing fishing regulations, it is not the most efficient or appropriate operational unit for devising and implementing a Standardized Bycatch reporting Methodology (SBRM). The most efficient designs for collecting information on and monitoring discards occurring in a fishery recognize and incorporate the unique characteristics of each fishery.”* Thus, the operational unit for the SBRM is the fishing “mode”.

A boat using a state permit reports trip-level data to the Atlantic Coastal Cooperative Statistics Program (ACCSP) using SAFIS to report their commercial catch and effort data.¹

However, this approach and the resulting data limit gives rise to some issues. Fishing trips or sets targeting SD are not declared before they are undertaken and gaining data on retained catch and by catch is only possible once a vessel has landed. Furthermore, it is not always possible to determine the origin of the catches between federal and state waters, and an assessment of these components of P2 was only possible at the gear level.

6.5 Bycatch Species

6.5.1 Outcome

Long Line

As noted above there are no main bycatch species and only limited quantities of vulnerable species are caught.

Gill Net

As noted above there are no main bycatch species and only limited quantities of vulnerable species are caught.

Trawl

As noted above there are no main bycatch species and only limited quantities of vulnerable species are caught.

¹ See <http://www.accsp.org/aboutsafis.htm>

6.5.2 Management

Long Line

As noted above there are no main bycatch species and only limited quantities of vulnerable species are caught.

Gill Net

As noted above there are no main bycatch species and only limited quantities of vulnerable species are caught.

Trawl

As noted above there are no main bycatch species and only limited quantities of vulnerable species are caught.

6.5.3 Information

Discards are recorded under the same program as those described for the retained catch. As such, the discard information suffers from the same issues identified above, which are related to the fact that the fishery is characterized after the event from the information contained in VTRs and that non-federally permitted vessels are not required to participate in the Federal Observer Program or submit VTRs.

6.6 Endangered, Threatened and Protected species

6.6.1 Context

There is a long standing commitment in US for the protection of ETP species. The legislative basis for the protection of ETP species is found in the ESA and the MMPA.

There are about 1,950 species listed under the ESA (<http://www.nmfs.noaa.gov/pr/species/esa/>). Of these species, approximately about 1,375 are found in part or entirely in the US and its waters; the remainder are foreign species. Generally, USFWS manages land and freshwater species, while NMFS manages marine and "anadromous" species. NMFS has jurisdiction over 72 listed species. The ESA requires NMFS to designate critical habitat and to develop and implement recovery plans for threatened and endangered species.

The MMPA was enacted on October 21, 1972. All marine mammals are protected under the MMPA. The MMPA prohibits, with certain exceptions, the "take" of marine mammals in US waters and by US citizens on the high seas, and the importation of marine mammals and marine mammal products into the US

Three species of birds identified as Special Concern (SC) by the USFWS are vulnerable to entanglements in the SD fishery; as these are classified as vulnerable, they are also considered in this section.

A number of Species of Concern as identified by NMFS occur in the area covered by the SD fishery including Atlantic halibut, Atlantic Wolffish, cusk, thorny skate, dusky shark, and sand tiger shark. The catch and retention of these species is prohibited due to their low population levels and fishermen are not allowed to possess them. For many species with low incidental catch, there are concerns that the catch of these species is not well documented, could be discarded and that the species are not well studied. None of these species are identified in the catch data (table 6).

6.6.2 Outcome

The outcome is assessed below for each ETP species that could be affected by the SD fishery. As these species are widely distributed and often migratory, the assessment is relevant to the large areas of distribution of these populations of ETP species. As such, what follows applies to all UoC.

There is a formal review in place to evaluate the impact of fisheries on ETP species, to measure the performance of the measures implemented and to take corrective actions as necessary. These reviews are documented in Biological Opinions (BO) given within the ESA Section 7 consultation.

In 2010, MAFMC, in cooperation with NMFS, determined that the following species (table 10) protected either by the ESA or the MMPA may be found in the environment inhabited by SD (MAFMC 2010a).

- Cetaceans: Northern right whale (*Eubalaena glacialis*) – EN; Humpback whale (*Megaptera novaeangliae*) – EN; Fin whale (*Balaenoptera physalus*) – EN; Blue whale (*Balaenoptera musculus*) – EN; Sei whale (*Balaenoptera borealis*) – EN; Sperm whale (*Physeter macrocephalus*) – EN; Minke whale (*Balaenoptera acutorostrata*) – Protected (PR); Beaked whales (*Ziphius* and *Mesoplodon* spp.) – PR; Risso's dolphin (*Grampus griseus*) – PR; Pilot whale (*Globicephala* spp.) – PR; White-sided dolphin (*Lagenorhynchus acutus*) – PR; Common dolphin (*Delphinus delphis*) – PR; Spotted and striped dolphins (*Stenella* spp.) – PR; and Bottlenose dolphin (*Tursiops truncatus*) – PR.
- Sea turtles: Leatherback sea turtle (*Dermochelys coriacea*) – EN; Kemp's ridley sea turtle (*Lepidochelys kempii*) – EN; Green sea turtle (*Chelonia mydas*) – EN; Hawksbill sea turtle (*Eretmochelys imbricata*) – EN; and Loggerhead sea turtle (*Caretta caretta*) – TH.
- Fish: Short nose sturgeon (*Acipenser brevirostrum*) – EN; and Atlantic salmon (*Salmo salar*) – EN.

MAFMC also recognizes interactions with Harbor porpoise in its plan, through protective measures under the Harbor Porpoise Take Reduction Plan (HPTRP).

In its BO regarding the impact of the SD fishery on ETP species (NMFS 2010b), NMFS has determined that the action being considered in the Opinion may affect the following ESA-listed species in a manner that will likely result in adverse effects: North Atlantic right whale; Humpback whale; Fin whale; Sei whale; Loggerhead sea turtle; Leatherback sea turtle; Kemp's ridley sea turtle; and Green sea turtle. These species are widely distributed and could undergo extensive migrations. As such, the information available, their management and the outcome are typically described for the biological unit they belong to and cannot be attributed to a particular UoC. Accordingly, except where indicated, the observations made herein apply to all UoCs.

NMFS has determined that the action being considered in the BO (i.e. the SD FMP) is not likely to adversely affect short nose sturgeon, the Gulf of Maine distinct population segment of Atlantic salmon, hawksbill sea turtles, blue whales, and sperm whales, all of which are listed as endangered species under the ESA. Thus, these species have not been considered further in the 2010 BO.

In January 2012, federal government declared that the four populations of Atlantic sturgeon from New York to Florida as endangered and a fifth one in the Gulf of Maine as threatened. These are now protected under ESA.¹ As stated by NOAA “Mixed stock analysis of Atlantic sturgeon collected along the U.S. coast indicates that Atlantic sturgeon occur most prominently in the vicinity of their natal river(s). This means that Atlantic sturgeon of the NYB and CB DPSs will occur most frequently in the coastal environment of the Mid-Atlantic. Bycatch mortality for Atlantic sturgeon is known to occur predominantly in sink gillnet gear (Stein et al., 2004; ASMFC, 2007), and this gear type is used in the monkfish and spiny dogfish fisheries that occur in the Mid-Atlantic. Based on the mixed stock analysis results, a significant number of bycatch interactions occur in the Mid Atlantic Bight region and over 40 percent of these interactions were with fish from the NYB DPS and 20 percent were with fish from the CB DPS. Given that fish from these two DPSs are most likely to occur in the Mid Atlantic Bight region (e.g., in close proximity to their rivers of origin), they are highly

¹ <http://www.nmfs.noaa.gov/pr/species/fish/atlanticsturgeon.htm>.

susceptible to take as bycatch in fisheries. In accordance with the Magnuson Stevens Fishery Conservation and Management Act (MSA), effort control measures were implemented to address rebuilding of monkfish and spiny dogfish stocks via fishery management plans developed in the late 1990's. Fish from the NYB and CB DPSs likely benefited from these effort control measures, because the amount of sink gillnets in Mid-Atlantic waters was reduced. However, monkfish is no longer overfished, and quota allocations for spiny dogfish have been increased. Therefore, as fish stocks are rebuilt, we anticipate that sink gillnet fishing effort will increase in the Mid-Atlantic. In addition, individual-based assignment and mixed stock analysis of samples collected from sturgeon captured in Canadian fisheries in the Bay of Fundy indicated that approximately 1-2% were from the NYB DPS, and perhaps 1% from the Chesapeake DPS (Wirgin et al., in draft)". This means that future management plans for the SD fishery will have to take this into account.

There are no species of birds considered in the 2010 BO. Previous assessments indicated little interaction with the SD fishery. Two endangered species of birds, the roseate tern and the Bermuda petrel (believed to have a population of less than 200 individuals), may occur in the areas fished for SD, however, they are very unlikely to be caught in the fishery (ASMFC 2002).

Regarding the status of ESA-listed species that will likely result in adverse effects, the following are extracts (except where otherwise identified as "Notes") from the 2010 Biological Opinion (NMFS 2010b):

- North Atlantic right whale (Endangered). *"The minimum number alive population index for the years 1990-2005 suggests a positive trend in numbers. These data reveal a significant increase in the number of catalogued whales alive during this period, but with significant variation due to apparent losses exceeding gains during 1998-1999. Mean growth rate for the period 1990-2005 was 1.8% (Waring et al. 2009). In a more recent update of the assessment, Waring et al. 2010 (draft) indicate that "reported human-caused mortality and serious injury was a minimum of 3.0 right whales per year from 2004 through 2008. Given that PBR has been set to 0.7, no mortality or serious injury for this stock can be considered insignificant."*
- Humpback whale (EN). *"The best available population estimate for Humpback whales in the North Atlantic Ocean is 11,570 animals, and the best, recent estimate for the Gulf of Maine stock is 847 whales (Waring et al. 2009). Anthropogenic mortality associated with fishing gear entanglements and ship strikes remains significant. In the winter, mating and calving occurs in areas located outside of the United States where the species is afforded less protection. Despite all of these factors, current data suggest that the Gulf of Maine humpback stock is steadily increasing in size (Waring et al. 2009). Population modeling, using data obtained from photographic mark-recapture studies, estimates the growth rate of the Gulf of Maine stock to be at 6.5% for the period 1979-1991 (Barlow & Clapham 1997). More recent analysis for the period 1992-2000 estimated lower population growth rates ranging from 0% to 4.0%, depending on calf survival rate (Clapham et al. 2003 in Waring et al. 2009). However, it is unclear whether the apparent decline in growth rate is a bias result due to a shift in distribution documented for the period 1992-1995, or whether the population growth rates truly declined due to high mortality of young-of-the-year whales in US Mid-Atlantic waters (Waring et al. 2009). Regardless, calf survival appears to have increased since 1996, presumably accompanied by an increase in population growth (Waring et al. 2009). Stevick et al. (2003) calculated an average population growth rate of 3.1 % in the North Atlantic population overall for the period 1979-1993. ... Therefore, given the best available information, for the purposes of this biological opinion, NMFS believes the humpback whale population is increasing."*
- Fin whale (EN). *"...the best population estimate for the western North Atlantic fin whale is 2,269 and the minimum population estimate is 1,678. The 2009 SAR indicates that there are insufficient data at this time to determine population trends for the fin whale. Fishing gear appears to pose less of a threat to fin whales in the North Atlantic Ocean than to North Atlantic right or humpback whales. However, fin whales continue to be struck by large vessels and some level of whaling for fin whales in the North Atlantic still occurs." "The Draft 2010 SAR (Waring et al.*

2010) for the western North Atlantic fin whale stock reports an increase in the estimated population size (3,985), minimum population size (3,269), and PBR (6.5). The Draft SAR reported an increase in overall documented serious injury and mortality to fin whales to an average rate of 3.2 per year. Incidental fishery entanglement records and ship strike records for the period 2004 through 2008 averaged of 1.2 (V.S. waters, 1.0) and 2.0 (V.S. waters, 1.4) respectively per year.”

- Sei whale (EN). “The best estimate of abundance for the Nova Scotia stock of sei whales is 386 (Waring et al. 2009). There are insufficient data to determine trends of the Nova Scotian sei whale population. One (1) sei whale serious injury from fishery interaction and three (3) mortalities from ship strike have been recorded in US waters between 2003 and 2007 (Glass et al. 2009).”
- Loggerhead sea turtle (TH). In 2008, the Loggerhead Biological Review Team (BRT) identified nine loggerhead DPSs distributed globally including the Northwest Atlantic Ocean.” *The BRT concluded that although some DPSs are indicating increasing trends at (some) nesting beaches ... available information about anthropogenic threats to juveniles and adults in neritic and oceanic environments indicate possible unsustainable additional mortalities. According to the threat matrix analysis in the BRT report, the potential for future decline is greatest for the North Indian Ocean, Northwest Atlantic Ocean, Northeast Atlantic Ocean, Mediterranean Sea, and South Atlantic Ocean DPSs (Conant et al. 2009).*”
- Leatherback sea turtle (EN). “Of the Atlantic sea turtle species, leatherbacks seem to be the most vulnerable to entanglement in fishing gear, trap/pot gear in particular. This susceptibility may be the result of their body type (large size, long pectoral flippers, and lack of a hard shell), and their attraction to gelatinous organisms and algae that collect on buoys and buoy lines at or near the surface, and perhaps to the light sticks used to attract target species in longline fisheries. Leatherbacks entangled in fishing gear generally have a reduced ability to feed, dive, surface to breathe, or perform any other behavior essential to survival (Balazs 1985). In addition to drowning from forced submergence, they may be more susceptible to boat strikes if forced to remain at the surface, and entangling lines can constrict blood flow resulting in tissue necrosis.” ... “Nest counts in many areas of the Atlantic Ocean show increasing trends, including for beaches in Suriname and French Guiana which support the majority of leatherback nesting (NMFS & USFWS 2007b). The species as a whole continues to face numerous threats in nesting and marine habitats. As with the other sea turtle species, fishery mortality accounts for a large proportion of annual human-caused mortality outside the nesting beaches, while other activities like pollution and habitat destruction account for an unknown level of other mortality.”
- Kemp’s ridley sea turtle (EN). “The majority of Kemp’s ridleys nest along a single stretch of beach near Rancho Nuevo, Tamaulipas, Mexico (Carr 1963; USFWS & NMFS 1992; NMFS & USFWS 2007c). The number of nesting females in the Kemp’s ridley population declined dramatically from the late 1940s through the mid-1980s, with an estimated 40,000 nesting females in a single arribada in 1947 and fewer than 250 nesting females in the entire 1985 nesting season (USFWS & NMFS 1992; TEWG 2000). However, the total annual number of nests at Rancho Nuevo gradually began to increase in the 1990s (NMFS & USFWS 2007c). Based on the number of nests laid in 2006 and the remigration interval for Kemp’s ridley sea turtles (1.8-2 years), there were an estimated 7,000-8,000 adult female Kemp’s ridley sea turtles in 2006 (NMFS & USFWS 2007c).” ... “As with the other sea turtle species, fishery mortality accounts for a large proportion of annual human-caused mortality outside the nesting beaches, while other activities like dredging, pollution, and habitat destruction account for an unknown level of other mortality.”
- Green sea turtle (EN). “Seminoff (2004) and NMFS & USFWS (2007d) .. indicate sea turtle abundance is increasing in the Atlantic Ocean. Each also concluded that nesting at T6rtuguero, Costa Rica represented the most important nesting area for green sea turtles in the western Atlantic and that nesting had increased markedly since the 1970s (Seminoff 2004; NMFS & USFWS 2007d).” “...The endangered breeding population in Florida appears to be increasing based upon index nesting data from 1989-2006 (NMFS & USFWS 2007d).” “As with the other

sea turtle species, fishery mortality accounts for a large proportion of annual human-caused mortality outside the nesting beaches, while other activities like dredging, pollution, and habitat destruction account for an unknown level of other mortality.”

Cumulative effects of various threats have been considered in the 2010 BO (NMFS 2010b): *“The Status of the Species, Environmental Baseline, and Cumulative Effects sections, taken together, establish a “baseline” against which the effects of the continued operation of the SD fishery within the constraints of the current SD FMP are analyzed to determine whether the action is likely to jeopardize the continued existence of listed species in the action area.”*

Section 6 of the 2010 BO identifies the anticipated take of cetaceans and sea turtles in the SD gears while Section 7 provides an integration and synthesis of effects. Selected extracts are given below:

- North Atlantic Right Whale. *“...the Draft 2010 SAR indicates an increase in the North Atlantic right whale population size and growth rate. In addition, it is worth noting that these positive population trends have been calculated and realized without consideration of the beneficial effects of recently implemented regulations designed to reduce the risk of ship strikes and entanglement in fishing gear. Considering the likely beneficial, yet unrealized and yet to be modeled effects of these recent regulations, the population of North Atlantic right whales is likely to grow at a faster rate than that modeled by Pace (in review) and currently observed which would result in an accelerated rate of recovery.” “Based on the analysis described above, the serious injury or mortality of one (1) right whale per year, as a result of fisheries entanglement is not likely to reduce appreciably the likelihood of both survival and recovery of the North Atlantic right whale population.”*
- Humpback Whale. *... the estimated increases in the Gulf of Maine stock and the North Atlantic populations of humpback whales indicate that these populations are recovering despite continued interactions with commercial fisheries inside the US EEZ.” “The rate of humpback entanglements in fishing gear continues to be of concern to resource managers. The relatively new broad based gear modifications of the ALWTRP are expected to reduce the risk of serious injuries or mortalities due to humpback whale entanglement. The most recent data strongly suggests the humpback whale population is steadily increasing despite the anthropogenic and cumulative effects previously discussed in this Opinion. While takes of humpback whales continue to be possible under the continued authorization of the SD FMP, the level of take is not expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of this species.”*
- Fin and Sei Whales. *“Serious injury and mortality entanglements of fin and sei whales have been documented but occur at a level below PBR for both species (Waring et al. 2009). This indicates that the level of serious injuries or mortalities of fin and sei whales attributable to US commercial fisheries still allows these stocks to maintain population levels and growth rates needed to reach or maintain their optimum sustainable population. Additionally, broad based gear modifications of the ALWTRP have been implemented and preliminary data in the Draft 2010 SAR shows a greater and a stable population size for fin and sei whales respectively. While takes of fin and sei whales continue to be possible under the continued authorization of the SD FMP, the level of take is not expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of these species.”*
- Loggerhead Sea Turtle. *“..The continued operation of the SD fishery is expected to harass, injure, or kill loggerhead sea turtles as a result of physical contact between the sea turtles and the fishing gear. No other effects to loggerhead sea turtles are expected as a result of the proposed action. The continued operation of the fishery will not affect the protection of nests, nesting beaches, and the marine environment nor will it compromise the ability of researchers to conduct scientific studies or management officials to enact peer-review strategies or legislative policy. Therefore, the continued operation of the SD fishery within the constraints of the current SD FMP will have no appreciable reduction in the ability to achieve the Listing Factor Recovery Criteria.”*

- Leatherback Sea Turtle. *“...Based on the nesting numbers, the annual female population growth rate was positive for the 18-year time period from 1989-2006 (NMFS & USFWS 2007b). The annual loss of up to four leatherback sea turtles, together with an increase in nesting, is not expected to affect the positive growth rate in the female population of leatherback sea turtles nesting in Puerto Rico, St. Croix, and Florida. Therefore, the continued operation of the SD fishery within the constraints of the current SD FMP will not appreciably reduce the likelihood of recovery for leatherback sea turtles in the Atlantic.”*
- Kemp’s ridley Sea Turtle. *“...Kemp's ridley sea turtles are experiencing considerable increases in nesting (NMFS and USFWS 2007c). ... The observed increase in nesting of Kemp's ridley sea turtles suggests that the manmade factors which contributed to its being listed under the ESA as an endangered species have been reduced to the extent that more female Kemp's ridley sea turtles are reaching maturity and nesting and/or mature females are living longer, thus producing more nests over their lifetime. The continued loss of up to four Kemp's ridleys annually is not expected to change the trend in increased nesting. With an increasing nesting trend, the loss of four Kemp's ridleys will not compromise the continued existence of the species...Therefore, the continued operation of the SD fishery within the constraints of the current SD FMP will not appreciably reduce the likelihood of recovery for the species.”*
- Green Sea Turtles. *“...an average of 5,039 green sea turtle nests has been laid annually over the past 6 years in Florida. Thus, recovery criteria # 1 has been met, and the annual loss of up to five green sea turtle which may be male or female, mature or immature, is not expected to materially affect the 6-year average of nests on Florida beaches. With respect to recovery criteria #3, there is evidence of substantial increases in the number of green sea turtles on foraging grounds within the western Atlantic....The annual loss of five green sea turtles, together with an increase in nesting, is not expected to materially affect the increasing to stable trend in the number of green sea turtles on the foraging grounds in the Atlantic. Therefore, the continued operation of the SD fishery will not appreciably reduce the likelihood of recovery for green sea turtles in the Atlantic.”*

On the anticipated amount or extent of incidental take, the 2010 BO concluded the following: *“Based on data from observer reports for the SD fishery, estimates of sea turtle take in gear used in the SD fishery, and the distribution and abundance of turtles in the action area, NMFS anticipates that the continued implementation of the SD FMP, may result in the taking of sea turtles as follows:*

- *For loggerhead sea turtles, NMFS anticipates (a) the annual take of up to one individual over a 5-year average in trawl gear; which may be lethal or non-lethal and (b) the annual take of up to one individual over a 5-year average in gillnet gear, which may be lethal or non-lethal;*
- *For leatherback sea turtles, NMFS anticipates the annual lethal or non-lethal take of up to four individuals in trawl gear and gillnet gear combined;*
- *For Kemp's ridley sea turtles, NMFS anticipates the annual lethal or non-lethal take of up to four individuals in trawl gear and gillnet gear combined;*
- *For green sea turtles, NMFS anticipates the annual lethal or non-lethal take of up to five individuals in trawl gear and gillnet gear combined”.*

NMFS is not including an incidental take authorization for right, humpback, fin, and sei whales at this time because the incidental take of ESA-listed whales has not been authorized under section 101(a)(5) of the MMPA.”.

On the anticipated impact of incidental take *“NMFS has concluded that the continued operation of the SD fishery may adversely affect but is not likely to jeopardize loggerhead, leatherback, Kemp's ridley or green sea turtles. Nevertheless, NMFS must take action to minimize these takes. The following Reasonable and Prudent Measures (RPMs) have been identified as ways to minimize sea turtle interactions with the SD fishery now and to generate the information necessary in the future to continue to minimize incidental takes. These measures are non-discretionary and must be implemented by NMFS”.*

These measures are (NMFS 2010b):

1. *“NMFS must seek to ensure that any sea turtles incidentally taken in spiny dogfish fishing gear are handled in such a way as to minimize stress to the animal and increase its survival rate.*
2. *NMFS must seek to ensure that monitoring and reporting of any sea turtles encountered in spiny dogfish fishing gear: (1) detects any adverse effects such as injury or mortality; (2) assesses the realized level of incidental take in comparison with the anticipated incidental take documented in this Opinion; (3) detects whether the anticipated level of take has occurred or been exceeded; and (4) collects data from individual encounters.*
3. *NMFS must continue to investigate and implement as appropriate, within a reasonable time frame following sound research, gear modifications for gear used in the spiny dogfish fishery to reduce incidental takes of sea turtles and/or the severity of the interactions that occur.*
4. *NMFS must continue to review available data to determine whether there are areas or conditions within the action area where sea turtle interactions with commercial trawl and gillnet fishing gear are more likely to occur.”*

The best current abundance estimate for the Gulf of Main/Bay of Fundy harbor porpoise is 89,054 (Waring 2010 draft). The PBR is 703 animals. Recent assessments suggest that the total annual human-caused mortality now exceeds the PBR.

Bottlenose dolphins, which range from Central Florida to Long Island, are managed as five management units or sub-stocks. For those stocks where the level of mortality can be estimated, the PBR is not exceeded. Some populations remain resident in bays, sounds and estuaries but most of these populations have undetermined PBR as scientists are still perfecting the definition of these populations.

Regarding Marine mammal species protected under the MMPA, with respect to Harbor porpoise and Bottlenose dolphin, MAFMC 2010a states that *“To date, management measures consistent with the Federal SD rebuilding plan have eliminated widespread directed fishing for SD, including the gillnet fishery for SD in North Carolina. Additionally, protective measures under the Harbor Porpoise Take Reduction Plan (HPTRP) and Bottlenose Dolphin Take Reduction Plan (BDTRP) in combination with Federal SD harvest policy have been sufficient to reduce gillnet fishery interactions with harbor porpoises and bottlenose dolphins below PBR levels.”* We note that this conclusion is inconsistent with the scientific information provided by Waring 2010 (draft)

Sea birds

Three species of birds have been identified as Species of Concern by USFWS within the area of the fishery.

- Common loon: Warden (2010) concludes that the average annual bycatch of common loons was ~9% of PBR; the author observes that in recent years, bycatch was lower resulting in an average bycatch of about 5% of the PBR for the species.
- Black-capped petrel: while the black-capped petrel occurs in the areas fished, this species is unlikely to overlap with the distribution of SD fishing efforts (ASMFC 2002).
- Razorbill: this species breeds on islands in Maine and could be caught in gillnets but the SD fishery is considered to have no impact on this component.

Previous assessments (ASFMC 2002) indicated little interaction of sea birds with the SD fishery. Accordingly, these three species are not considered in the scoring of this PI.

6.6.3 Management

The Northeast Regional Office Protected Resources Division is mandated to manage, conserve and rebuild populations of marine mammals and endangered and threatened marine species in rivers, bay and estuaries, and in marine waters, within 200 miles of shore, from NC to ME. As such, what follows applies to all UoCs.

From: http://www.nero.noaa.gov/prot_res/ : *“The Northeast Region Protected Resources Division is comprised of three programs: the Marine Mammal Program, Section 7/Sea Turtle Program, and the Salmon, Sturgeon, and Species of Concern Program. The Marine Mammal Program is dedicated to protecting whales, dolphins, porpoises, and seals from harm caused by human activities. The program carries out the mandates of the MMPA of 1972: to conserve healthy populations and to rebuild (or “recover”) populations that are strategic. The Section 7 Program assists Federal agencies in fulfilling their obligations under Section 7(a)(2) of the ESA, which requires them to consult with NOAA Fisheries Service to ensure that any action they authorize, fund, or carry out is not likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of critical habitat. The Sea Turtle Program is focused on managing, conserving, and rebuilding populations of threatened and endangered sea turtles in the Northeast and mid-Atlantic waters. The Salmon, Sturgeon and Species of Concern Program is dedicated to the protection and recovery of threatened or endangered marine and anadromous species such as salmon, sturgeon, and various species of concern. The Protected Resources Division works with state agencies, other federal agencies, industry, environmental groups, and other organizations and individuals to prevent the extinction of marine species as well as to protect them from any harm caused by human activities. To assist these efforts, the Protected Resources Division has identified research priorities and need for the species it is responsible for in the Northeast Region. These priorities and needs can assist NOAA Fisheries Service’s partners to align needed research with the Service’s mandates and management goals, and may assist in the development of proposal ideas when funding opportunities arise”.*

Under the ESA – Section 7 Consultation Process, Federal agencies are required to consult with the NMFS (or FWS) when actions they fund authorize or carry out may affect any listed species under the ESA. Section 7(a) 1 of the ESA requires all Federal agencies to use their authorities to conduct conservation programs. Section 7 (a) 2 requires all Federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species. Consultations pursuant to Section 7 of the ESA are conducted with Federal action agencies to avoid, minimize or mitigate the impacts of their activities on listed species. NMFS also reviews non-Federal activities which may affect species listed under the ESA and issues permits under section 10 for the incidental take of those species and for scientific research and enhancement purpose (see http://www.nero.noaa.gov/prot_res/section7/).

NOAA Fisheries Service implemented the Atlantic Large Whale Take Reduction Plan (ALWTRP) to reduce injuries and deaths of large whales due to incidental entanglement in fishing gear (<http://www.nero.noaa.gov/whaletrp/>). Higgins J. & G. Salvador (2010) write *“The ALWTRP focuses on the critically endangered North Atlantic right whale, but is also intended to reduce entanglements of endangered humpback and fin whales and to benefit non-endangered Minke whales. Under the protection of the ESA, Federal agencies are required to ensure that permitted activities (such as fishing) do not jeopardize the continued existence of any endangered species. Since the ALWTRP measures are intended to reduce entanglements of right, humpback, and fin whales in fishing gear, these measures also help to avoid the likelihood that Federally permitted fishing activities will cause harm to or jeopardize the continued existence of these whales ...In October 2007, NMFS issued a final rule which implements broad-based gear modifications to replace the programs This broad-based gear modification strategy includes expanded weak link and sinking ground line requirements; additional gear marking requirements; changes in boundaries; seasonal restrictions for gear modifications; expanded exempted areas; and regulatory language changes for the purposes of clarification and consistency”.*

The Sea Turtle Protection Program (http://www.nero.noaa.gov/prot_res/seaturtles/) provides information, recovery plans for various species of sea turtles as well as status reviews. The Strategy for Sea Turtle Conservation and Recovery is described in <http://www.nmfs.noaa.gov/pr/species/turtles/strategy.htm> that states *“the Strategy for Sea Turtle Conservation and Recovery in Relation to Atlantic and Gulf of Mexico Fisheries is a program devoted to reducing sea turtle bycatch by evaluating and addressing priority gear types on a*

comprehensive per-gear basis throughout the Atlantic and Gulf of Mexico, rather than fishery by fishery....Certain types of gear are more prone to the incidental capture of sea turtles than others, depending on the design of the gear, the way the gear is fished, and the time and area in which the gear is fished.”

The Atlantic Trawl Gear Take Reduction Strategy (http://www.nero.noaa.gov/prot_res/atgtrp/) of NFMS convenes a take reduction team (TRT) to address the incidental mortality and serious injury of long-finned pilot whales, short-finned pilot whales, common dolphins, and white sided dolphins incidental to the Mid-Atlantic mid-water trawl fishery, as well as other trawl fisheries. Under section 118 of the MMPA, the Atlantic Trawl Gear TRT is responsible for developing a take reduction plan (TRP) to reduce mortality and serious injury of these species in the Atlantic trawl gear fishery. The immediate goal of the TRP is to reduce, within six months of implementation, the incidental mortality and serious injury of marine mammals to levels less than the stock's PBR level. The long term goal is to reduce within five years of implementation, the mortality and serious injury of marine mammals to insignificant levels approaching a zero mortality and serious injury rate.

The HPTRP aims at reducing interactions between harbor porpoise and commercial gillnet gear capable of catching multispecies in both the Gulf of Maine and the Mid-Atlantic (see http://www.nero.noaa.gov/prot_res/porptrp/). The HPTRP (NMFS 2009c, NMFS 2010a) was developed to reduce interactions between harbor porpoises and commercial gillnet gear in waters off New England and the Mid-Atlantic. The HPTRP manages harbor porpoise bycatch in two components: the New England component and the Mid-Atlantic component. In New England, the HPTRP utilizes seasonal time and area closures that correspond with the highest seasonal abundances of harbor porpoises. Also in New England, acoustic alarms, or pingers, are required seasonally in specific management areas to deter harbor porpoises and to prevent entanglement in commercial gillnet gear. In the Mid-Atlantic, time and area closures are utilized in combination with seasonal gear modification requirements. Gear modification requirements ensure that commercial gillnet gear is deployed in configurations least likely to result in harbor porpoise entanglement.

Gear restrictions are currently implemented under the BDTRP, affecting small, medium, and large-mesh gillnets, along the Atlantic coast from NJ to FLA. The regulatory recommendations seek to reduce soak times and modify fishing practices to limit bycatch of bottlenose dolphins. These regulations may also benefit ESA-listed species that are present in the area during BDTRP regulatory measures. The take reduction team meets periodically to monitor implementation and effectiveness of the plan.

Under the Migratory Bird Treaty Act (see description in ASMFC 2002), it is unlawful “*by any means or in any manner, to pursue, hunt, take, capture, [or] kill*” any migratory birds except as permitted by regulation. *The regulations prohibit the take of migratory birds except under a valid permit or as permitted in the regulations”.*

The MAFMC and NEFMC identify possible ETP species and their interactions with the SD fishery in their management plans (e.g. MAFCM & NEFMC 1999). Similarly, the IFMP for SD (ASMFC 2002) Section 7 identifies possible ETP species and their interactions with the SD fisheries. These concerns are being updated in the 2010 BO (NMFS 2010b, see Outcome above).

There are numerous regulations mandated by the MSA that may benefit ESA-listed species. Many fisheries are subject to different time and area closures. These area closures can be seasonal or year-round. Closure areas may benefit ESA-listed species due to elimination of active gear in areas where sea turtle and cetaceans are present. However, if closures shift effort to areas with a comparable or higher density of marine mammals or sea turtles, then the risk of interaction could actually increase. Fishing effort reduction (i.e. landing/possession limits or trap allocations) measures may also benefit ESA-listed species by limiting the amount of time that gear is present in the species environment. Additionally, gear restrictions and modifications required for fishing regulations may also decrease the risk of entanglement with endangered species.

Some regulations specify measures or restrictions (gear, area) aiming directly at the protection of ETP species. For instance (extracts from NMFS 2010c):

- Gear & area restrictions. A vessel fishing for, possessing, or landing SD in Federal waters must have a Federal SD permit and must comply with all applicable Federal gear and area requirements, including gear/area restrictions to protect right whales and other federally protected species.
- Gillnet requirements for protected species. In addition to the requirements for gillnet fishing identified under the NE multispecies regulations, protected species requirements may also apply, depending on the season and area being fished. These requirements are to reduce incidental interactions between fishing gear and protected species, such as marine mammals and sea turtles. All persons owning or operating vessels in the EEZ that fish with sink gillnet gear and other gillnet gear, regardless of whether or not the gear is within a NE multispecies fishery exemption area, must comply with the applicable provisions of the:
 - Atlantic Large Whale Take Reduction Plan found in 50 CFR 229.32 and on the internet at <http://www.nero.noaa.gov/whaletrp/> . Requirements include time-area closures (with limited exceptions) and gear modifications (e.g., weak links, anchoring requirements, sinking ground line, gear marking) from Maine through the east coast of Florida.
 - HPTRP found in 50 CFR 229.33 (Gulf of Maine) and 229.34 (Mid- Atlantic) and on the internet at <http://www.nero.noaa.gov/porptrp/> . Requirements include time-area closures and seasonal gear modifications (e.g., pingers in the Gulf of Maine and gear requirements in the Mid-Atlantic) from Maine through North Carolina.
 - BDTRP found in 50 CFR 229.35 and on the internet at <http://www.nmfs.noaa.gov/pr/interactions/trt/bdtrp.htm> . Requirements include time-area closures and gear restrictions (e.g., prohibited night sets, net tending, gear length requirements, etc.) from New Jersey through the east coast of Florida.
 - Gear Restrictions in the NC/VA Large Mesh Gillnet Fishery for the Protection of Sea Turtles found in 50 CFR 223.206 and on the internet at http://www.nero.noaa.gov/prot_res/seaturtles/. Requirements include seasonal time-area closures to large mesh gillnet fishing (greater than or equal to 7 inches).

Finally, the Bycatch Reduction Engineering Program has been implemented to help NMFS meet its obligations under the MSA, ESA, MMPA, and the US National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries.

Sea birds

The US Fish and Wildlife Service has a series of programs aimed at the conservation of wildlife, including the protection of endangered species, habitat conservation, migratory birds management, aquatic habitat and species conservation, waterfowl management..

In a study of bycatch of protected species in US east coast commercial fisheries, Zollett (2009) reports that *“To date, no management measures for sea bird bycatch have been implemented in fisheries of the US east coast.”* Similarly, while a number of mitigation measures have been developed, Zollett (2009) reports that *“no mitigation measures have yet been implemented on the east coast of the United States to reduce bycatch of sea birds”*.

The Bycatch Reduction Engineering Program (NMFS 2011b) was implemented to develop technological devices and other conservation engineering designed to minimize bycatch, seabird interactions, bycatch mortality, and post-release mortality in federally managed fisheries. In 2010, the program included projects to reduce bycatch in Atlantic gillnet and trawl fisheries, as well as to enhance documentation and monitoring of seabird bycatch around the country. This program will help NMFS meet its obligations under the MSA, ESA, MMPA, and the US National Plan of Action for Reducing the Incidental Catch of Seabirds in Longline Fisheries.

6.6.4 Information

The monitoring programs (logbooks, observer programs) for ETP species are the same as those identified in Principle 1. The programs apply to all UoCs. Program resources are assigned based on an evaluation of threats and levels of risks. UoCs are treated equally in that context.

Data on ETP species are analyzed and documented in BOs prior to being considered in various FMPs. From NMFS 2010b, we note:

- *“It is important to note that commercial and recreational fishing vessels are often permitted to operate within multiple federal fisheries and species of fish managed under multiple FMPs are commonly landed concurrently. As a result, for the purposes of this Opinion, fishing effort under the SD FMP includes actions that result in landings of SD by federally permitted vessels operating within the action area.... In order to identify and analyze fishery impacts on ESA-listed species, ideally, documented takes of listed species would be linked to FMPs proportionally based on the fish catch composition of the fishing trip. As an example, fishing effort and estimated bycatch of ESA-listed species for a trip that landed 40% SD, 35% haddock (a species managed under the Multispecies FMP) , and 25% monkfish would be allocated proportionately to the SD FMP (40%), Multispecies FMP (35%), and Monkfish FMP (25%). The overall estimated bycatch for each FMP is the sum of the proportionally allocated bycatch estimates.*
- *However, data on take of protected species does not currently completely align with this ideal definition of the fishery. We have the benefit of scientifically produced estimates of loggerhead sea turtle bycatch in commercial trawl and gillnet fisheries pertaining to the action area considered in this consultation (Murray 2005 and Murray 2009a). The bycatch estimate for trawl fisheries attributes takes to the most abundant (by weight) fish species (which are used as a proxy for associated FMPs) landed per trip. Alternatively, the gillnet loggerhead bycatch estimate is more closely aligned with our ideal definition of the fishery as it proportionally attributes sea turtle takes consistent with the composition of the fish catch for that trip. For leatherback, Kemp's ridley, and green sea turtles observed takes of sea turtles are attributed to the FMP that covers the species which makes up the majority (by weight) of the catch for the trip during which sea turtle(s) were caught. The number of observed non loggerhead sea turtle takes attributable to a specific fishery is a small sample size. Given that we know these are underestimates since they are a tally of observations rather than an overall estimate, we have selected to use the total number of leatherback, Kemp's ridley and green sea turtle takes by species and gear type as the estimated take level. While this may attribute the same take of a turtle to multiple fisheries using the same gear type, and in that way over count that individual take, this is offset by the fact that the number of observed takes is less than the number of actual takes occurring in the fishery. For listed large whales, we can only rarely attribute takes to a specific fishery. Therefore, we attribute takes by gear type and assume that anyone of the fishery management plans that authorize the use of that gear may be responsible for that take.*
- *In regards to the recreational component of this and other fisheries, stranding data provide some evidence of interactions between recreational H&L gear and ESA-listed species, but assigning the gear to a specific fishery is rarely, if ever, possible. Presently, there are no other data sets available to provide estimates of incidental take for recreational fishing activities in an area as extensive as the action area for this consultation. There is an effort to include questions about interactions with ESA-listed species in a survey similar to the Marine Recreational Fisheries Statistics Survey (MRFSS), but the development of the survey has not been completed. Therefore, NMFS is unable to estimate an amount or extent of take occurring in the recreational component of the SD fishery at this time and will instead focus the majority of the effects analysis on the commercial component of the fishery”.*

Atlantic Right Whale (from NMFS 2010b)

- *“Entanglement records from 1990-2007 maintained by NMFS include 46 confirmed right whale entanglement events (Waring et al. 2009). Because whales often free themselves of gear*

following an entanglement event, scarification analysis of living animals may provide better indications of fisheries interactions rather than entanglement records (Waring et al. 2009). Data presented in Knowlton et al. 2008 indicate the annual rate of entanglement interaction remains at high levels. Four hundred and ninety-three (493) individual, catalogued right whales were reviewed and 625 separate entanglement interactions were documented between 1980 and 2004. Approximately 358 out of 493 animals (72.6% of the population) were entangled at least once; 185 animals bore scars from a single entanglement; however one animal showed scars from 6 different entanglement events. The number of male and female right whales bearing entanglement scars was nearly equivalent (142/202 females, 71.8%; 182/224 males, 81.3%), indicating that right whales of both sexes are equally vulnerable to entanglement. However, juveniles appear to become entangled at a higher rate than expected if all age groups were equally vulnerable. For all years but one (1998), the proportion of juvenile, entangled right whales exceeded their proportion within the population. Based on photographs of catalogued animals from 1935 through 1995, Hamilton et al. (1998) estimated that 6.4% of the North Atlantic right whale population exhibits signs of injury from vessel strikes. Reports received from 2003-2007 indicate that right whales had the greatest number of ship strike mortalities (n=9) and serious injuries (n=2) compared to other large whales in the Northwest Atlantic (Glass et al. 2009). In 2006 alone, four (4) reported mortalities and one (1) serious injury resulted from right whale ship strikes (Glass et al. 2009).”

Leatherback sea turtle

- “Leatherbacks have been documented interacting with longline, trap/pot, trawl, and gillnet fishing gear. For instance, according to observer records, an estimated 6,363 leatherback sea turtles were documented as caught by the US Atlantic tuna and swordfish longline fisheries between 1992-1999 (NMFS SEFSC 2001). Currently, the US tuna and swordfish longline fisheries managed under the HMS FMP are estimated to capture 1,764 leatherbacks (no more than 252 mortalities) for each 3-year period starting in 2007 (NMFS 2004a). In 2008, there were 90 observed interactions between leatherback sea turtles and longline gear used in the HMS fishery. Four of the leatherbacks were dead upon release and one was in unknown condition. The vast majority of leatherbacks that were released alive had injuries due to external hooking (Garrison et al. 2009). Based on the observed take, an estimated 381.3 (95% CI: 288.7-503.7) leatherback sea turtles are estimated to have been taken in the longline fisheries managed under the HMS FMP in 2008 (Garrison et al. 2009). The 2008 estimate is consistent with the annual numbers since 2005 and remains well below the average prior to implementation of gear regulations (Garrison et al. 2009). Since the US fleet accounts for only 5%-8% of the longline hooks fished in the Atlantic Ocean, adding up the under-represented observed takes of the other 23 countries actively fishing in the area would likely result in annual take estimates of thousands of leatherbacks over different life stages (NMFS SEFSC 2001). Lewison et al. (2004) estimated that 30,000-60,000 leatherbacks were taken in all Atlantic longline fisheries in 2000 (including the US Atlantic tuna and swordfish longline fisheries as well as others).
- Other trawl fisheries are also known to interact with leatherback sea turtles although on a much smaller scale. In October 2001, for example, a fisheries observer documented the take of a leatherback in a bottom otter trawl fishing for *Loligo* squid off of Delaware. TEDs are not currently required in this fishery. In November 2007, fisheries observers reported the capture of a leatherback sea turtle in bottom otter trawl gear fishing for summer flounder.
- Gillnet fisheries operating in the waters of the Mid-Atlantic States are also known to capture, injure, and/or kill leatherbacks when these fisheries and leatherbacks co-occur. Data collected by the NEFSC Fisheries Observer Program from 1994-1998 (excluding 1997) indicate that a total of 37 leatherbacks were incidentally taken (16 lethally) in drift gillnets set in offshore waters from Maine to Florida during this period. Observer coverage for this period ranged from 54%-92%. In North Carolina, six additional leatherbacks were reported incidentally taken in gillnet sets in the spring (NMFS SEFSC 2001). In addition to these, in September 1995, two dead leatherbacks were removed from an 11-inch (28.2-cm) monofilament shark gillnet set in the near shore waters off of

Cape Hatteras (STSSN unpublished data reported in NMFS SEFSC 2001)”.

Entanglement Reports are published regularly (NMFS 2009a, b; NMFS 2010e).

For sea turtles, there is an extensive network of participants along the Atlantic and Gulf of Mexico coasts which collects data on dead sea turtles, and rescues and rehabilitates stranded sea turtles. The network (Sea Turtle Stranding and Salvage Network) provides data to monitor stranding levels and to identify areas where unusual or elevated mortality is occurring.

Some stakeholders (The Humane Society of the United States, *pers. comm.*) expressed the concern that “*the NMFS does not specify a target species for which a particular entangling net was set...*” They note that “*...there is no physical difference between a sink gillnet set for SD and one set for groundfish. Thus, any sink gillnet (other than monkfish nets, which are generally “tie down” nets) would pose the same risk to whales. And the large whales often “run off” with nets that entangle them, so determining where a fatally entangling net originated is difficult to impossible*”. A key issue is that “*the nets are indistinguishable and it is often difficult or impossible to determine the net’s target species after the fact*”. They are concerned that “*despite the management measures in place (e.g. weak links on buoy lines and in the net itself), whales continue to be seriously injured or killed in sink gillnets. Even though nets are required to be configured with “weak links” that facilitate the rope in the nets breaking, they are concerned that whales are still entangled and dying in them*”. They also note that while “*restrictions on the timing of fishery effort (time-area closures) and required use of gear modifications have reduced some of the mortality sustained by bottlenose dolphins and harbor porpoise, levels are still excessive.*”

Similarly, for dolphins and porpoises, the analyses available on incidental mortality are typically done at the gear level, without due reference or attribution to the actual fisheries.

With respect to monitoring, the 2010 BO notes the following: “*NMFS must continue to monitor levels of sea turtle bycatch in the SD fishery. Observer coverage has been used as the principal means to estimate sea turtle bycatch in the SD fishery and to monitor incidental take levels. NMFS will continue to use observer coverage to monitor sea turtle bycatch in commercial net, trawl, and H&L gear that is authorized by the SD FMP. NMFS should also continue to support NEFOP’s development of a video monitoring pilot project to evaluate its utility for various fishing gear types including bottom otter trawls and gillnets. If video monitoring proves to be a feasible supplement to observer coverage, the utility of video in identifying sea turtle bycatch events could be investigated. In the future, video could potentially be used to evaluate compliance with VTR requirements for incidentally taken sea turtles. For the purposes of monitoring this ITS, NMFS will continue to use observer coverage as the primary means of collecting incidental take information. The loggerhead sea turtle take estimates in the Opinion were generated using statistical estimates that are not feasible to conduct on an annual basis. Conducting such statistical estimates are infeasible on an annual basis due to the data needs, length of time to develop, review, and finalize the estimates, and methodology used. As these estimates depend on take rate information over a several year period, re-examination after one year is not likely to produce any noticeable change in the take rate. For these reasons, approximately every 5 years, NMFS will re-estimate takes in the SD fishery using appropriate statistical methods. A new bycatch estimate for loggerhead sea turtles caught in trawl gear is scheduled to be completed in 2010. A revised estimate for gillnet gear is planned to be completed within 5 years since the publication of Murray (2009a). For species other than loggerheads, NMFS will use all available information (e.g., observed takes, changes in fishing effort, etc.) to determine if the annual incidental take level in this Opinion has been met or exceeded. NMFS will append each year’s determination and the five-year estimate for loggerheads to this Opinion.*”

The bycatch of sea birds and other species on US East coast was summarized by Zollett (2009). For common loon, the information available is sufficient to assess the potential biological removal (Warden, 2010).

As indicated above, discards are being addressed by various mitigation measures and the development of technological devices. As such, the Bycatch Reduction Engineering Program (NMFS

2011b) provides a valuable source of funding for information, know-how and research on ways to minimize bycatch and the impact of fishing.

6.7 Habitat

6.7.1 Outcome

Habitat considerations are documented in reviews of Essential Fish Habitat (EFH), e.g. see NEFMC 2010a, NEFMC 2010b. The main conclusions are general with a focus on gears or gear types, i.e. not specifically to the SD fishery. For instance, the following are extracts from NEFMC 2010a:

- *“The conclusions drawn by these studies are that commercial fishing gear damages deep-water corals. Trawling, specifically, is very detrimental to coral and the seafloor. The level of damage between trawled and untrawled sites was large enough to conclude that fishing had a negative impact on both the corals and associated fauna. The substrates of heavily fished areas have been stripped to bare rock or reduced to coral rubble and sand, whereas unfished and lightly fished areas did not see such degradation (Grehan et al. 2005). Passive gear, such as pots or long lines, while still affecting localized area of corals, were not as destructive as trawl gear. Coral mortality was markedly increased due to corals being crushed, buried and wounded by gear as it was dragged over the bottom (Fosså et al 2002). The degree of disturbance to the coral and seafloor ranges from lightly disturbed areas of overturned cobble with attached, living, coral, to complete stripping of the seafloor (Stone 2006).*
- *The deep-water reefs attract fauna and promote areas of high diversity in an otherwise low diversity area. Fishermen have reported that as the damage to the reefs increase, areas that were once fertile fishing grounds have seen fewer successful fishing trips (Fosså et al 2002). The fauna associated with corals are primarily “removed” along with the destruction of the coral substrate.*
- *While much of the coral on fishing grounds was damaged or destroyed there were areas that avoided contact. As stated previously, corals growing on steep slopes had a natural protection from commercial fishing gear as a slope >20 degrees cannot be trawled. Areas of higher three dimensional complexity were also relatively untouched, as these were avoided by the fishermen for fear of damage and loss of their gear. The studies have concluded that deep-water corals are especially fragile and the greatest disturbance and destruction occurs at depths targeted by commercial fishing (Heifetz et al 2009, Hall-Spencer et al. 2002). Bottom contact gear is especially detrimental and there is a correlation between the highest rates of coral damage and the depths targeted by that industry in particular. Slow growth rates and reproductive processes that are so easily disrupted result in a timely recovery period of disturbed areas”.*

It is also noted that the effort spent by the various gears is now much less than it used to be. This is illustrated in the NEFMC Document B from the Joint Habitat Meeting (1-2 April 2010) which shows the area swept by gear type for the years 1996-2008 (Figure 22).

With respect to the condition of habitats and habitat areas of particular concern as they relate to the SD fishery, the conclusions can be found in the Habitat Considerations section of the ASFMC Management Plans. For instance (from ASMFC 2002):

- *“Identification and Distribution of Habitat and Habitat Areas of Particular Concern. SD are predominately epibenthic species, with no known associations to any particular substrate, submerged aquatic vegetation, or any other structural habitat (McMillan & Morse 1998). However, its life history does focus towards the ocean bottom and SD may be potentially adversely impacted if this bottom were to be negatively impacted. In addition, SD may rely heavily on estuarine areas for habitat as well as a source of some of their prey such as menhaden.*

Figure 22: Area swept estimates

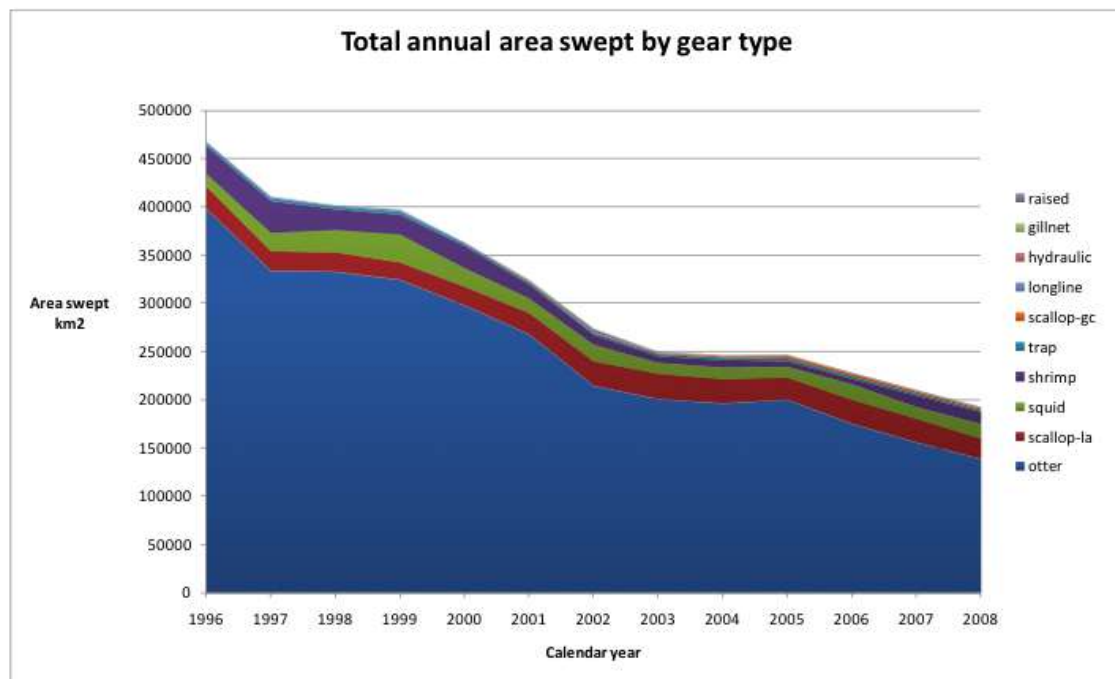
Area Swept Estimates

The following table and figures show area swept by gear type for the years 1996-2008. The data were taken from fishing vessel trip reports, with area swept models parameterized using observer data, as required. Estimates are already modified for gear contact with the seabed (this applies only to trawl gears, as all other contact indices were set to 1). Please note that colors corresponding to particular gear types are not consistent between figures.

Table 1 – Area swept for various gear types by calendar year. Otter trawl category includes all trawl trips not classed as squid, shrimp, or raised footrope. Gears are listed from left to right in order of mean annual area swept for the time series.

Year	Otter trawl	Scallop limited access	Squid trawl	Shrimp trawl	Trap lobster& dsrc	Scallop general category	Longline	Hydraulic dredge	Gillnet	Raised footrope trawl
1996	397,956	22,929	13,438	28,876	2,956	333	1,313	0	256	0
1997	333,819	20,009	19,196	33,039	2,921	419	1,452	0	214	0
1998	332,696	19,937	23,412	21,441	3,010	399	867	0	295	0
1999	324,336	17,846	29,247	20,524	3,030	282	2,022	0	243	0
2000	297,670	19,523	19,452	22,921	2,454	320	514	427	254	0
2001	267,764	22,048	15,444	14,397	2,281	1,031	726	490	324	0
2002	214,176	25,662	17,321	9,931	2,124	1,192	2,688	541	165	0
2003	200,477	26,525	11,390	6,720	2,276	1,095	199	576	214	306
2004	195,945	25,528	12,143	7,586	2,479	1,496	74	613	162	309
2005	199,819	23,269	11,241	5,702	2,602	2,902	86	686	375	155
2006	174,846	25,271	16,173	5,496	2,514	2,728	90	702	140	220
2007	155,489	24,928	12,167	11,699	2,277	2,254	63	860	112	325
2008	138,384	21,402	15,108	12,472	1,951	1,708	96	856	125	323

Figure 1 – All gears



- *Present Condition of Habitats and Habitat Areas of Particular Concern. Many anthropogenic actions threaten the integrity of SD habitat. Coastal development, water withdrawal, nonpoint source pollution, dredging, port development, marinas, wetland loss, and sewage disposal all impact estuarine areas which SD may rely on for habitat and as a source for prey. Because its life history does focus towards the ocean bottom, any mobile gear that comes in contact with the bottom may potentially adversely impact habitat that is important to SD. Although it is difficult to gauge the specific impact of mobile gear on SD habitat, there are potential impacts”.*

Habitat considerations are also referred to in the MAFMC analyses and reviews (e.g. see Section 6.3 - Physical Environment and Essential Fish Habitat in MAFMC 2010a).

- *“Commercial gear types used to harvest SD include sink gill nets, hook gear, and to a much lesser extent bottom otter trawls Over two-thirds of the reported landings of SD in FY 2008 were caught in sink gill nets, 15% with hook and line, and only 5% in bottom trawls. The quantity of SD caught in trawls and discarded was almost the same (500,000 lbs.) as the quantity landed Of these three gear types, the bottom otter trawl is the only gear known to significantly affect benthic marine habitats....” (MAFMC 2010a)*

These are consistent with the comments received during the interviews with stakeholders. Of particular relevance is the observation that there were no issues with respect to fishery interactions with corals due to the type of substrate preferred by SD and the fact that SD is part of the epibenthic fauna. Also, the risks of gear loss are minimized because of short soak times (regulated) in gillnets. For trawls, there were no specific concerns, except for a general concern regarding their impact on bottom structure and fauna.

The impact of the SD fishery on habitat areas of special concern can also be found in the BO regarding the impact of the SD fishery on ETP species (NMFS 2010b):

- *“NMFS has determined that the action being considered in the Opinion is not likely to adversely modify or destroy designated critical habitat for North Atlantic right whales. This determination is based on the action's effects on the conservation value of the habitat that has been designated. Specifically, we considered whether the action was likely to affect the physical or biological features that afford the designated area value for the conservation of North Atlantic right whales. Critical habitat for right whales has been designated in the Atlantic Ocean in Cape Cod Bay, Great South Channel, and in near shore waters off Georgia and Florida (50 CFR 226.13). Cape Cod Bay and Great South Channel, which are located within the action area, were designated as critical habitat for right whales due to their importance as spring/summer foraging grounds for the species. What makes these two areas so critical is the presence of dense concentrations of copepods. The SD fishery will not affect the availability of copepods for foraging right whales because copepods are very small organisms that will pass through SD fishing gear rather than being captured in it. Since the action being considered in this Opinion is not likely to affect the availability of copepods and these were the biological feature that characterized feeding habitat, this action is not likely to adversely modify or destroy designated critical habitat for right whales and, therefore, right whale critical habitat will not be considered further in this Opinion.*
- *Humpback whales, like other baleen whales, may also be adversely affected by habitat degradation, habitat exclusion, acoustic trauma, harassment, or reduction in prey resources due to trophic effects resulting from a variety of activities including fisheries operations, vessel traffic, and coastal development. Currently, there is no evidence that these types of activities are affecting humpback whales. However, Geraci et al. (1989) provide strong evidence that a mass mortality of humpback whales from 1987-1988 resulted from the consumption of mackerel whose livers contained high levels of saxitoxin, a naturally occurring red tide toxin, the origin of which remains unknown. It has been suggested that the occurrence of a red tide event is related to an increase in freshwater runoff from coastal development, leading some observers to suggest that such events may become more common among marine mammals as coastal development continues (Clapham et al. 1999). There have been three additional known cases of a mass mortality*

involving large whale species along the East coast between 1998 and 2008. In the 2006 mass mortality event, 21 dead humpback whales were found between July 10 and December 31, 2006, triggering NMFS to declare an unusual mortality event (UME) for humpback whales in the Northeast United States. The UME was officially closed on December 31, 2007 after a review of 2007 humpback whale stranding and mortality showed that the elevated numbers were no longer being observed. The cause of the 2006 UME has not been determined to date, although investigations are ongoing”.

EFH for SD transcends the boundaries of the UoCs and issues are managed at a higher level. Accordingly, the above applies to all UoC.

6.7.2 Management

There is a formal framework in place to evaluate the impact of fisheries on habitat. This framework is documented in reviews of EFH, e.g. NEFMC 2010a, NEFMC 2010b. Habitat considerations have been routinely included in management plans which typically include a section on EFH. Evidence of these can be found in MAFMC 2010a, ASFMC 2002 and MAFMC and NEFMC 1999. EFH considerations are an integral part of the fisheries management process and are reviewed as necessary to support strategic decision, as evidenced by supporting documents such as NEFMC 2010a, NEFMC 2010b, NEFMC 2010c. Through this framework, susceptibility and recovery scores are available for various gear (trawl, scallop dredge, hydraulic dredge, longline and gillnet, trap) and substrate (mud, sand, Granule-pebble, cobble, boulder) types; the results for trawls, longline and gillnets are the most relevant for the SD fishery. The main conclusions are (NEFMC 2010a):

- *“In addition to the above, Marine Protected Areas are used to conserve natural and cultural heritage, and/or to support sustainable production of our marine resources (http://www3.mpa.gov/mpa_lib/websites.aspx).*
- *From Snapshot of United States MPAs. (http://www.mpa.gov/pdf/national-system/nat_sys_snapshot.pdf). Many MPAs have more than one conservation focus. Seventy percent were created, at least in part, to conserve natural heritage values such as biodiversity, ecosystems, or protected species. Approximately 24% of US MPAs focus on sustainable production, and 6% focus primarily on conserving our nation’s cultural heritage.*
- *From: Framework for the National System of Marine Protected Areas of the United States of America. (<http://www.mpa.gov/pdf/national-system/finalframeworksummary.pdf>)*

MPAs are designated and managed at all levels of government by a variety of agencies including parks, fisheries, wildlife, natural resource and historic resource departments, among others. US MPAs have been established by well over 100 legal authorities, with some federal and state agencies managing more than one MPA program, each with its own legal purpose. There are approximately 1,700 existing MPAs in the United States that have been established by federal, state, territorial, and local governments to protect and conserve the nation’s rich natural and cultural marine heritage and sustainable production resources. These MPAs have been designated to achieve a myriad of conservation objectives, ranging from conservation of biodiversity hotspots, to preservation of sunken historic vessels, to protection of spawning aggregations important to commercial and recreational fisheries. Similarly, the level of protection provided by these MPAs ranges from fully protected or no-take marine reserves to sites allowing multiple uses, including fishing, recreational, and industrial uses”.

The above applies to all UoCs.

6.7.3 Information

NMFS provides guidance to RFMCs on identifying and describing the EFH of their managed species. Consistent with this guidance, the species reports present information on current and historic stock sizes, geographic range, and the period and location of major life history stages. The habitats of managed species are described by the physical, chemical, and biological components of the ecosystem where the species occur. Information on the habitat requirements is provided for each life

history stage, and it includes, where available, habitat and environmental variables that control or limit distribution, abundance, growth, reproduction, mortality, and productivity. Technical Memorandum NMFS-NE-150 (NOAA 1999a) documents the life history and habitat characteristics for SD. It provides detailed information on juveniles and adults, reproduction, food habits, migration, stock structure and geographical distribution.

The MSA requires FMPs to minimize, to the extent practicable, the adverse effects of fishing on fish habitats. To meet this requirement, fishery managers would ideally be able to quantify such effects and visualize their distributions across space and time. The Swept Area Seabed Impact (SASI) model provides such a framework, enabling managers to better understand: (1) the nature of fishing gear impacts on benthic habitats, (2) the spatial distribution of benthic habitat vulnerability to particular fishing gears, and (3) the spatial and temporal distribution of realized adverse effects from fishing activities on benthic habitats. The SASI model was developed by the NEFMC Habitat Plan Development Team (see NEFMC 2010a, NEFMC 2010b, ICES 2010, NEFMC 2010c).

A goal of the vulnerability assessment is to base estimates of susceptibility and recovery of features to gear impacts on the scientific literature to the extent possible. The model could also be used to support a criteria-based evaluation for the definition of MPAs. The analyses conducted so far had a focus on gears or gear types but have potential to provide insight on fishery-specific impacts.

The above applies to all UoCs.

6.8 Ecosystem

6.8.1 The Atlantic Coast Marine Ecosystem

NMFS measures progress towards the sustainability of US fisheries through the Fish Stock Sustainability Index (FSSI). This index measures the performance of 230 key stocks and increases as additional assessments are conducted, overfishing is ended and stocks rebuild to the level that provides MSY. The index increased from 357.5 in 2000 to 573 in 2009 (Figure 23). The 60% increase in the FSSI in 9 years represents significant progress in improving the knowledge of stock status and sustainable management of US fisheries, nationwide (NMFS 2010d).

Figure 23: FSSI Score 2000 - 2009



Source: NMFS 2010d.

The general concept of ecosystem-based fishery management, the type of information available for the Northeast Continental Shelf and the factors to consider are described in “Ecology of the Northeast Continental Shelf – Toward an Ecosystem Approach to Fisheries Management” published by the NEFSC Fisheries Science Center and NOAA/NMFS (www.nefsc.noaa.gov/ecosys/Ecosystems.pdf).

SD is known for its opportunistic feeding behavior. SD feeds primarily on bony fish, also molluscs, crustaceans and other invertebrates. As reported by ASMFC 2002, “*Bowman et al. (1984) provided an extensive examination of the SD diet, with samples collected from shelf waters of the NW Atlantic Ocean during the period 1969-1983. The area studied included continental shelf waters extending from Cape Hatteras, NC to Browns Bank, Nova Scotia. The stomach contents of 10,167 SD were examined during this period (about 50% of the stomachs were empty). Fish was the single most important prey item in the diet of SD. Herrings (several species), Atlantic mackerel, American sand lance, and codfishes, including species such as Atlantic cod, haddock, silver hake, red hake, white hake and spotted hake were some of most important prey items identified. Other important contributors to the diet of SD included Loligo and Ilex squid, ctenophores, crustaceans (principally decapod shrimp and crabs) and bivalves (principally scallop viscera).*”

The ecological importance of SD is not known with any certainty, but if it is as abundant as is commonly assumed, the species may represent a significant component of the coastal marine ecosystem (Bundy A., 2003). As stated in ASFMC 2002: “*SD are potential competitors with virtually every marine predator within the NW Atlantic Ocean ecosystem. Potential competitors include a wide variety of predatory fish, marine mammals and seabirds.*”

SD is ubiquitous and its population is increasing. Because of this and because it is an important predator species within the range of their distribution, many believe that SD is preventing recovery of traditional groundfish species (FishNet USA 2008). Accordingly, many believe that the SD population must be controlled or kept at bay to reduce the effect of predation on other species.

6.8.2 Outcome

The role of SD as a predator has been documented in a number of scientific publications and in technical documents supporting the work of fisheries commissions in the U.S. and elsewhere. The following extract from NOAA 2007a summarizes that role.

- “*SD feed on squid and fish throughout life. They tend to eat small size classes or young fish, and as they grow they eat larger individuals of the same species (Bowman et al. 1984). Squid are a major part of the diet in all geographical areas except for the Mid- Atlantic (Table 3). Bivalves particularly Pectinidae (scallops) are consumed in the Mid-Atlantic, off southern New England (waters from Cape Cod to south of Long Island), and on Georges Bank. Scombridae (mackerel) are consumed on the Scotian Shelf, while Clupeidae (herring) are eaten inshore and off southern New England. Gadidae (hakes) are mainly consumed off southern New England and on Georges Bank. Ammodytidae (sand lances) are consumed in the Gulf of Maine. In NEFSC trawl surveys north of Cape Hatteras, Atlantic menhaden Brevoortia tyrannus are consumed only in small quantities (Table 3); however, menhaden were major prey of SD in the early 1960s off South Carolina (Bearden 1965). The opportunistic nature of SD is supported by their consumption of flatfishes, blennies, sculpins, capelin, ctenophores, jellyfish, polychaetes, sipunculids, amphipods, shrimps, crabs, snails, octopods, squids, and sea cucumbers off the US east coast (Templeman 1944; Jensen et al. 1961; Jensen 1966; Burgess 2002). Occurrence of ctenophores in diets has increased over the last decade as the availability of these organisms in the oceans has increased (Link and Ford 2006).*”

SD is part of a complex ecosystem and their role, both as predator and competitors with virtually every marine predator within the NW Atlantic ocean ecosystem (ASMFC 2002), is complex and only partly understood. Multi-species simulation work (Link 2002) suggests that the principal effect of elimination of SD would be to increase of the population of various species of skate, with little impact on traditional groundfish populations. Also, both SD and traditional groundfish have been abundant in the past and many groundfish stocks have been rebuilding in recent years despite the abundance of SD. In his study of ecological interactions between elasmobranchs and groundfish species, Link et al. 2002 concludes that “*Estimates of consumption indicate that both the number and the total biomass of the groundfish that are removed are generally small fractions of total fishery*

removals and stock sizes” and “predation by elasmobranchs probably does not have significant impacts on groundfish in this system”.

The impact of the SD fishery on the ecosystem function has been reviewed as part of the 2010 BO regarding the impact of the SD fishery on ETP species. In particular, NMFS 2010b states the following:

- *“NMFS also determines that the continued operation of the SD fishery will not have any adverse effects on the availability of prey for humpback, fin, and sei whales. Like right whales, sei whales feed on copepods (Perry et al. 1999). As indicated above, the SD fishery will not affect the availability of copepods for foraging sei whales because copepods are very small organisms that will pass through SD fishing gear rather than being captured in it. Dense aggregations of late stage and diapausing Calanus finmarchicus in the Gulf of Maine and Georges Bank region will not be affected by the SD fishery. In addition, the physical and biological conditions and structures of the Gulf of Maine and Georges Bank region and the oceanographic conditions in Jordan, Wilkinson, and Georges Basin that aggregate and distribute Calanus finmarchicus are not affected by the SD fishery. Humpback and fin whales feed on krill as well as small schooling fish (e.g., sand lance, herring, mackerel) (Aguilar 2002; Clapham 2002). SD fishing gear operates on or very near the bottom. Fish species caught in SD gear are species that live in benthic habitat (on or very near the bottom) such as flounders versus schooling fish such as herring and mackerel that occur within the water column. Therefore, the continued operation of the SD fishery will not affect the availability of prey for foraging humpback or fin whales. In addition, the SD fishery does not operate in low latitude waters where the overwhelming majority of calving and nursing occurs for these large whale species (Aguilar 2002; Clapham 2002; Horwood 2002; Kenney 2002; Sears 2002). Therefore, the continued operation of the SD fishery will not affect the oceanographic conditions that are conducive for calving and nursing.”*

6.8.3 Management

Recognizing the complexity of role and function of SD in the ecosystem, managers adopted an approach whereby SD is managed as any other fisheries resource, i.e. as per the principles of optimal use stated in the MSA.

The role of the ecosystem is taken into account in specific sections of FMPs (MAFMC & NEFMC 1999) and in the work of the ASFMC (ASFMC 2002). Amendments to the initial plans include an evaluation of the impact of alternatives, in sections dedicated to biological and ecological impacts.

In addition to direct references in the FMPs for SD, there is an elaborate program for the implementation of a network of Marine Protected Areas. These work in tandem with various fishery closures and restrictions.

6.8.4 Information

Ecological interactions between elasmobranchs and groundfish species have been described in Link et al. 2002. This work was based on diet studies based on the analysis of stomachs of 40,756 SD and of a number of other elasmobranch species.

Food habits of SD are detailed in the 2007 Essential Habitat Source Document (NOAA 2007a), together with detailed information on diet composition by fish length category and geographical area.

The Five-Year (2009-2013) Research Plan of the MAFMC includes a reference to investigating the effect of climate change on ecosystems and the fisheries they support. They also identify the need to incorporate ecosystem level data (predator/prey interactions, trophic dynamics, etc.) into multi-species assessment and management models.

7 OTHER FISHERIES AFFECTING TARGET STOCK

The other main fisheries on the SD stock are the recreational sector and Canadian fishing effort.

It has been calculated that the total US recreational catch of SD (i.e. maintained and released) constitutes about 8 % of total landings.

Canadian landings have averaged about 2,500 mt annually since 2000, with the majority being directed catch by hand line and longline, followed by gillnets. However less than 10 mt is recorded for 2010 as processing companies closed due to the lack of demand.

Almost all of the SD was caught in the Bay of Fundy, southwest Nova Scotia or off Halifax during the summer. Catches were unrestricted prior to 2002. From 2002 onwards, precautionary directed catch quotas based on past catches were put in place. The 2002 quota of 3,200 mt was exceeded by 384 mt, but directed catches in subsequent years have not exceeded the quota. The quota since 2004 has been 2,500 mt. Quotas to this point have not been based on scientific advice. There are no restrictions on discarding and bycatch in other fisheries.

8 STANDARD USED

The MSC Principles and Criteria for Sustainable Fisheries form the standard against which the fishery is assessed and are organized in terms of three principles. Principle 1 addresses the need to maintain the target stock at a sustainable level; Principle 2 addresses the need to maintain the ecosystem in which the target stock exists, and Principle 3 addresses the need for an effective fishery management system to fulfill Principles 1 and 2 and ensure compliance with national and international regulations. The Principles and their supporting Criteria are presented below.

Consideration of each principle is with reference to a number of PIs which are scored according to the approach established by MSC in the Default Assessment Tree. A brief introduction to the PIs is provided below.

Principle 1: A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted; the fishery must be conducted in a manner that demonstrably leads to their recovery.

The intent of this principle is to ensure that the productive capacities of resources are maintained at high levels and are not sacrificed in favor of short term interests. Thus, exploited populations would be maintained at high levels of abundance designed to retain their productivity, provide margins of safety for error and uncertainty, and restore and retain their capacities for yields over the long term.

Criteria:

1. The fishery shall be conducted at catch levels that continually maintain the high productivity of the target population(s) and associated ecological community relative to its potential productivity.
2. Where the exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level consistent with the precautionary approach and the ability of the populations to produce long-term potential yields within a specified time frame.
3. Fishing is conducted in a manner that does not alter the age or genetic structure or sex composition to a degree that impairs reproductive capacity.

Principle 1 PIs focuses on two key aspects of a fishery's performance -the current status of the target stock resource and a precautionary and effective harvest strategy. There is consideration of the tools, measures or strategies that are being used specifically to manage the impact of the fishery on the target species.

There are two primary PIs and one supplementary PI covering the current status of the target stock resource. These express the concept that (i) sustainability of target stocks comes from management behavior that increases the probability that exploited biomass fluctuates around the B_{MSY} target¹ and (ii) decreases the probability that it will drop significantly towards the point where recruitment becomes impaired.

Four PIs assess the performance of the harvest strategy (HS). In addition to a PI that considers the overall performance of the HS, three further ones consider key elements of harvest strategies: the control rules and tools in place, the information base and monitoring and the assessment method.

Principle 2: Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

¹ Or a higher target if this is warranted from a consideration of the trophic inter-dependencies of the target species.

The intent of this principle is to encourage the management of fisheries from an ecosystem perspective under a system designed to assess and restrain the impacts of the fishery on the ecosystem.

Criteria:

1. The fishery is conducted in a way that maintains natural functional relationships among species and should not lead to trophic cascades or ecosystem state changes.
2. The fishery is conducted in a manner that does not threaten biological diversity at the genetic, species or population levels and avoids or minimizes mortality of, or injuries to endangered, threatened or protected species.
3. Where exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level within specified time frames, consistent with the precautionary approach and considering the ability of the population to produce long-term potential yields.

Principle 2 is divided into five Components that cover the range of potential ecosystem elements that may be impacted by a fishery: retained by-catch; discarded by-catch; ETP species; habitats and; ecosystem i.e. broader ecosystem elements such as trophic structure and function, community composition and biodiversity.

Consideration of the impact of the fishery on all Principle 2 components may include unobserved mortality where these are appreciable e.g. illegal fishing, unregulated catches and ghost fishing.

Each of the five components comprises three PIs:

- An ‘Outcome’ PI considers the status of the impact or the risk that the fishery poses to that Component;
- A ‘Management Strategy’ PI considers the basis, reliability and implementation of the management strategy for the Component; and
- “Information” PI considers the nature, extent, quality and reliability of the monitoring and information that is relevant to developing and implementing the management strategy and measuring the outcomes of the strategy.

Principle 3: The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

The intent of this principle is to ensure that there is an institutional and operational framework for implementing Principles 1 and 2, appropriate to the size and scale of the fishery.

A. Management System Criteria:

1. The fishery shall not be conducted under a controversial unilateral exemption to an international agreement.

The management system shall:

2. Demonstrate clear long-term objectives consistent with MSC Principles and Criteria and contain a consultative process that is transparent and involves all interested and affected parties so as to consider all relevant information, including local knowledge. The impact of fishery management decisions on all those who depend on the fishery for their livelihoods, including, but not confined to subsistence, artisanal, and fishing-dependent communities shall be addressed as part of this process.
3. Be appropriate to the cultural context, scale and intensity of the fishery – reflecting specific objectives, incorporating operational criteria, containing procedures for implementation and a process for monitoring and evaluating performance and acting on findings.
4. Observe the legal and customary rights and long term interests of people dependent on fishing for food and livelihood, in a manner consistent with ecological sustainability.

5. Incorporates an appropriate mechanism for the resolution of disputes arising within the system¹.
6. Provide economic and social incentives that contribute to sustainable fishing and shall not operate with subsidies that contribute to unsustainable fishing.
7. Act in a timely and adaptive fashion on the basis of the best available information using a precautionary approach particularly when dealing with scientific uncertainty.
8. Incorporate a research plan – appropriate to the scale and intensity of the fishery – that addresses the information needs of management and provides for the dissemination of research results to all interested parties in a timely fashion.
9. Require that assessments of the biological status of the resource and impacts of the fishery have been and are periodically conducted.
10. Specify measures and strategies that demonstrably control the degree of exploitation of the resource, including, but not limited to:
 - a. setting catch levels that will maintain the target population and ecological community's high productivity relative to its potential productivity, and account for the non-target species (or size, age, sex) captured and landed in association with, or as a consequence of, fishing for target species;
 - b. identifying appropriate fishing methods that minimize adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas;
 - c. providing for the recovery and rebuilding of depleted fish populations to specified levels within specified time frames;
 - d. mechanisms in place to limit or close fisheries when designated catch limits are reached;
 - e. establishing no-take zones where appropriate.
11. Contains appropriate procedures for effective compliance, monitoring, control, surveillance and enforcement which ensure that established limits to exploitation are not exceeded and specifies corrective actions to be taken in the event that they are.

B. Operational Criteria

Fishing operation shall:

1. Make use of fishing gear and practices designed to avoid the capture of non-target species (and non-target size, age, and/or sex of the target species); minimize mortality of this catch where it cannot be avoided, and reduce discards of what cannot be released alive.
2. Implement appropriate fishing methods designed to minimize adverse impacts on habitat, especially in critical or sensitive zones such as spawning and nursery areas.
3. Not use destructive fishing practices such as fishing with poisons or explosives;
4. Minimize operational waste such as lost fishing gear, oil spills, on-board spoilage of catch etc.
5. Be conducted in compliance with the fishery management system and all legal and administrative requirements.
6. Assist and co-operate with management authorities in the collection of catch, discard, and other information of importance to effective management of the resources and the fishery.

The intent of Principle 3 is to ensure that there is an institutional and operational framework, appropriate to the size and scale of the fishery, for implementing Principles 1 and 2.

There are two Components:

- “Governance and Policy” considers:

¹ Outstanding disputes of substantial magnitude involving a significant number of interests will normally disqualify a fishery from certification.

- the legal and/or customary framework that overarches the fishery, and possibly other fisheries under the same management framework; and
- the consultation processes and policies, as well as the articulation of the roles and responsibilities of people and organizations within the overarching management system and other overarching policies supporting fisheries management.
- “Fishery Specific Management System” focuses on the management system directly applied to the fishery undergoing assessment. Performance indicators under this component consider:
 - the fishery-specific management objectives;
 - the decision-making processes in the relevant fishery;
 - the fishery’s compliance and enforcement system and implementation; and
 - research planning and monitoring and evaluation of the performance of the fishery management system.

The Risk-based Framework

The risk-based framework (RBF) was designed for use in association with the Default Assessment Tree. The RBF was adopted by MSC to enable scoring of fisheries in data-deficient situations, particularly for the “outcome” PIs associated with Principles 1 and 2. If it is determined by the assessment team that there is insufficient data to score a given outcome PI using the default scoring guideposts, the risk-based framework can be used as an alternative means of assessment.

9 BACKGROUND TO THE EVALUATION

9.1 Evaluation Team

Lead Assessor & Expert Adviser P3: Ian Scott. Ian is a fisheries consultant specializing in fisheries certifications, fisheries policy and fishery management issues with over 30 years of experience in the fishery sector. In recent years he has advised the Governments of Turkey, Montenegro, Serbia and Yemen on fisheries policy, including fisheries management, fleet development, the need for scientific research and fishery related environmental issues. He has co-prepared fisheries management plans for Turkey, Serbia and Montenegro. Ian has completed work as coordinator and P3 specialist on the assessments of the Portuguese sardine fishery, Canadian sablefish and Scotia Fundy haddock. He is lead assessor and P3 specialist on a number of other main assessments: BC SD, UK beam trawler, Mexico P&L fisheries and US SD. He has also completed a large number of pre-assessments for Moody Marine and is a certified auditor for the MSC chain of custody.

Expert Adviser P1: David Kulka. In a 32 year career with the Canadian DFO, Dave held a number of positions: research survey biologist, head of the observer program, head of commercial sampling including responsibility for the assessment of seven species, division manager for groundfish, head of resource sampling and head of Marine Fish Species at Risk and Regional SARA Coordinator. From 2008 he has been retired, and is scientist emeritus with DFO NL Region. He was responsible for the assessment of seven species. He has been a member of various committees and teams and formulated policy related to the conduct and mandate related to the Species at Risk Act. His duties have included: (i) designated expert, elasmobranchs and white hake for NAFO; (ii) member of the ICES elasmobranch working group; (iii) Chair of the ICES Fisheries Ecology working group; (iv) vice-Chair (northwest Atlantic) of the IUCN Elasmobranch Species Specialist Group; (v) member of the COSEWIC Marine Fish Subcommittee; and (vi) Chair of various CSAS process regional and national assessments including pre-COSEWIC assessments for plaice and smooth skate.

Expert Adviser P2: Denis Rivard. Denis is a consultant with 30 years of experience. Throughout his career, he has worked on a number of issues related to the conservation of marine and freshwater resources and their ecosystems. He served as delegate to the Advisory Committee on Fisheries Management of ICES, as representative on the Scientific Council of NAFO and as science representative on a number of advisory committees or organizations. His scientific publications and reports cover a wide range of topics in fisheries science and evaluation. In addition to his involvement in a number of international scientific advisory organizations, he was active in Canada as *ex-officio* member of the Fisheries Resource Conservation Council, as scientific advisor for the Canadian Atlantic Fisheries Scientific Advisory Committee and as Director of Science Peer Review and Advice for DFO. His professional career in DFO included a number of appointments, including scientific and program advisor in resource evaluation, senior policy and program advisor on marine fish, Director of the national fisheries research program, and Associate Director General for Ecosystem Science. As consultant on fisheries resource sustainability, he continues to take an active part in the development and implementation of conservation frameworks, their evaluation and their practical application to fisheries management.

9.2 Previous certification evaluations

This assessment is the first for this fishery.

9.3 Inspections of the Fishery

In the initial site visit in November, 2010, inspection of the fishery focused on the practicalities of fishing operations, the mechanisms and effectiveness of management agencies, environmental issues and the scientific assessment of the fisheries.

Various meetings were held as follows (Table 7). A summary of the issues discussed at each meeting is provided.

Table 7: Stakeholder Meetings

Date	Meeting	Meeting Topics / Issues
29.11.10	Gloucester MA Clients: Steve Barndollar Kristen Kristensen	<ol style="list-style-type: none"> 1. It is a dragger gill net fishery at the moment from NY down to NC. They don't buy monks or skates caught in trawl; do buy the occasional sole. In Gloucester cod and flounders. 2. 90 % of SD is caught in a gill net. 3. Trawl fishery tends to land more juvenile males and females. 4. There are trip limits. With 3,000 lbs. trip limit maybe 400/500 lbs. of cod. 5. It is a by catch of draggers and small boats in summer; it is a directed gill net fishery. 300 to 400 gill netters. 6. They buy through brokers. 7. They have no knowledge of discards. If there are discards it is due to size. 8. Interaction with turtles in the south. 9. The main specification is size – 26 “to 27 “and 4 lbs. to 5 lbs. 10. No long lining – at \$0.30 to \$0.35 per lb. it is not feasible. 11. SD is an under exploited fishery. 12. The fishery rebuilt faster than thought possible. 13. The size of fish has not dramatically increased. 60 % - 70 % was 5 lbs.; now 7 lbs. – 8 lbs.; but fecundity increased from 273 pups to 5/6 pups. 90 % of the processed SD is female. 14. The quota is 20 million pounds; but catch is not in line with market demand; a lot is from May to September when there is a low price. 15. Discard estimates are out if proportion i.e. 35 million pounds in dragger fishery. 16. The quotas cannot be increased too much. 17. All fish is exported – UK, France and Germany. The only new market is Russia. 18. There is a lack of participants in the fishery management process – more dialogue is needed. 19. Question about the timeliness of the biological survey. 20. Main biological issues are slow growth, targeting of females, the sex ratio and the size of the quota. 21. SD is not processed at sea. No tailing or finning is allowed. 22. The industry does not have timely access to survey data. They attend advisory meetings. 23. 30 % - 40 % observer coverage. They audit what is in the net. There is unloading data. 24. Fines are heavy so they are an effective deterrent. 25. Price \$0.35 per lb. delivered - \$0.20 to boats. Yield 32 % to 38 %.
29.11.10	Gloucester MA NMFS Emily Bryant Fishery Policy Analyst & Linsey Feldman	<ol style="list-style-type: none"> 1. From being a directed fishery, due to management it became one of incidental catch. Now there is a quota that has increased in recent years. 2. The stock declined but has now been rebuilt. 3. Possession limit increased with increase in quota. As this has gone up the amount of directed fishing has also increased. 4. The multi species FMP is managed with sectors.

	Fishery Management Specialist	<ol style="list-style-type: none"> 5. No hail out for SD so only way to know the type of fishing is through the catch. 6. Amendment 3 is looking at the % of trips directed on SD. 7. Omnibus amendment for all species. 8. Amendment 3 is looking at limited access, quota allocation between state and federal waters, research set aside and quota roll over. 9. Data on discards is old. 10. Multi species shift to sectors – see what this implies for discards. 11. Fishery strategy is to direct at SD so not to use multi-species quota. 12. Cannot just fish SD – need multi sector license, although there are exemption areas. 13. SD is open access. 14. Species with little commercial value (such as ocean pout and sculpins) do not have FMP. 15. Protected species have biological opinion division. ETP species – nothing specific. Some issues on turtles and whales but not jeopardizing so reasonable and prudent measures. Collect information. Minimize handling prior to release, closed areas, pingers, and take reduction plans for harbor porpoise and whale. 16. Difficult to attribute ETP interactions specifically to SD fishery. 17. Habitat. Trawling is the main issue. This is not specific to SD. Habitat closure areas in multi species FMP that have to be followed in other fisheries. 18. If directed fishery becomes more important, then there may be an impact analysis if it has considered that potential for inter actions has grown. 19. An omnibus EFH assessment is in process. 20. Gill nets need tagging. 21. Observer program contracted out to private sector. 22. Have to incorporate ecosystem into fishery assessment models – Jason Link. 23. ACL brings uncertainty into quota setting e.g. recreational fisheries, discards and take in Canadian waters. 24. The skewed female: male ratio was 1:7 now 2:5. Main question in short to medium term is whether there will be a dip in biomass as weak year classes (low pup production) come through. 25. There was not a definitive target point to declare fishery rebuilt. Redefined reference points and had these peer reviewed. 26. The precautionary approach is proactive to uncertainty. 27. When rebuilt F target can be more flexible and less precautionary. 28. Managers want greater stability in annual harvest due to marketing considerations. 29. FMP allows for change in reference points and specifications. Specifications are annual but can be for up to 5 years. 30. The specifications are robust and precautionary. 31. Monitoring is through landings, with dealer reports. Quota is monitored weekly. 32. FMPs must meet national standards as defined in MPA. Amendments are long term changes; frameworks more short term. 33. There are no perverse incentives. 34. Log books are reviewed monthly. In vessel trip report data base that is cross checked with dealer reports and area fished. States have own vessel log book. 35. There is no dock side monitoring in multi species. Observers placed according to gear type.
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		<p>36. Enforcement office in the Dept. of Commerce. Perceived to have not been doing their job.</p> <p>37. Monitor quota and not individual trip limits.</p> <p>38. Dog fish has a low priority.</p> <p>39. Research priorities are identified for different stocks and this comes out of stock assessments. A number of States have fishery independent surveys with near shore trawl. NEAMAP to cover gap with mid water survey.</p> <p>40. There is independent peer review of assessments.</p>
29.11.10	<p>Chatham MA</p> <p>CCCHFA</p> <p>John Pappalitto</p> <p>Tom Dempsey</p>	<p>1. The abundance and location of SD has pushed out other species. There has never been so much SD.</p> <p>2. New quotas do not reflect increased abundance.</p> <p>3. MAFMC changed the FMP so that Reference points can be incorporated more quickly into the harvest strategy.</p> <p>4. ASMFC has more reactive management approach.</p> <p>5. Prior to collapse no management and so initially poor respect for regulations as had to change mind set.</p> <p>6. Need constant harvest strategy so looking at MES.</p> <p>7. Stock much more resilient than initially thought and has recovered much faster than contemplated possible.</p> <p>8. Rebuilding plan has been successful. Reference points to peer review and confirmed rebuilding.</p> <p>9. Initial disagreement on biomass targets and NMFS disallowed.</p> <p>10. Strategy adopted – by catch fishing with seasonal quota and trip limits.</p> <p>11. Trip limit did not work with quota and this may have led to higher discards.</p> <p>12. In some areas discards were higher than landings. 46 % female discard; 70 % male.</p> <p>13. SD is component of multi species trips; some trips may be SD directed. Long line is the main gear.</p> <p>14. Questioned mortality of discards – it was assumed that survival rate changed.</p> <p>15. Long line in-shore in shallow waters with 3 lines at 1,800 hooks total.</p> <p>16. Use herring as bait.</p> <p>17. In 2010 conservative HS.</p> <p>18. HCR decided in MAFMC advisory council with industry and ENGO participation.</p> <p>19. States rubber stamp decisions.</p> <p>20. Management centers on dogfish permit, daily log book, dealer reports. States report catch weekly.</p> <p>21. In Federal waters need days-at-sea limit.</p> <p>22. Coast guards revise boats at-sea in State waters.</p> <p>23. Federal boats have VMS.</p> <p>24. Fishing depends on weather, stage of trip and other fishing options.</p> <p>25. Observers mainly targeting groundfish fishery.</p> <p>26. Limited gill net catches of dogs when targeting other species; try to avoid SD.</p> <p>27. They do not retain wolf fish. High survival of discards.</p> <p>28. Occasional loss of gill nets.</p> <p>29. Breaking tension of long line is whale safe.</p> <p>30. Pingers on gill nets.</p> <p>31. Some fishermen sell directly to processors.</p>

30.11.10	New Bedford Client: Brian Marder Louis Julliard	<ol style="list-style-type: none"> 1. The company is the primary buyer of SD in Chatham, Plymouth, RI and NH. 2. They buy the SD from smaller owner operated boats and 50 % is direct purchase. The rest through off-loaders; in the second half of the year exclusively from agents (more distant landing ports). 3. There was big decline in landings but did not want to shut down fishery off MA; and also controlled increase due to market demand; do not want a scenario of boom and bust as the business needs to be sustained in the long term. 4. Want to actively participate in the management plan and attended many hearings in the past. 5. Fish is getting bigger and so are the pups; there is heavy recruitment and fecundity increasing. 6. Was adviser to the NEFMC. 7. 90 % of catch in state waters. 8. 50 % gill net mainly from Chatham and 50 % long line from the Bay. Trawl none. 9. SD catch limit has to be above critical mass (i.e. financially feasible). 10. State-by-state quota. 11. The Federal authorities take a view over 2 to 3 years. 12. Listen to scientific advice apart from the results of research cruises with the change in vessels. 13. With sector fishing less effort and reduced discards compared to days at sea. 14. All boats come in with 3,000 lbs. limit. Trawler fish is soft. Due to quality issue do not want to have big trawlers in the fishery. Gill net and long line have less environmental impact. 15. To avoid lobster and skate a change in harvest strategy. 16. Gill net only target SD. 17. Effective MCS through vessel trip report (VTR) and if does not tally with purchases then audited and this could lead to loss of license. 18. Fishermen are aware of the turtle issue so avoid interactions with them. Turtles from Cape Hatteras south. 19. The introduction of sectors has led to decline in number of active vessels.
30.11.10	Woods Hole MA NEFSC Paul Rago Kathy Sosebee	<ol style="list-style-type: none"> 1. Stock not overfished at biomass target reference points. Acceptable for US component of stock. 2. Several technical reports prepared for MAFMC and ASMFC. 3. A lot of unknown data between state and federal waters. 4. Standard by-catch reporting methodology –omnibus used for all FMPs in NE. 5. Discard per unit of effort is basis of estimate. 6. Application of sectors has changed relationships. 7. Uncertainty of mortality of discards. 8. For a number of years avoided SD – as not economically viable directed fishery – but “strike” gill nets. 9. 3,000 lb. trip limit – viability depends on type of vessel – small boat is a viable directed fishery. 10. Current management system more egalitarian in spreading benefit. 11. From initial start of rebuilding in 1998 thought recovery would take 5 to 7 years, but reduced pup production and minimum size for marketed fish went down. From 2006 saw a huge shift in measures of stock abundance. This was because 2004 cold and saw different migration and led to greater abundance and bigger females. But the period of lower recruitment will lead to a reduction in biomass as the year classes come through. 12. Need to take a long view on resource – it is not a straight forward approach.

		<p>13. Discussed indicators of stock. Pup size.</p> <p>14. Problem is that true recruitment is not known.</p> <p>15. B threshold invokes rebuilding plan and is set at a point from which there could be recovery in 10 years.</p> <p>16. The harvest strategy is robust and precautionary. Takes into account FMSY, current stock status, uncertainty and a buffer.</p> <p>17. The ABC includes estimate of magnitude of discarding.</p> <p>18. Observer coverage 30 % - 40 %. Eisenburg effect – observers’ presence influences behavior.</p> <p>19. Choke stocks in Gulf of Maine. Winter flounder, yellowtail and thorny skate.</p> <p>20. Static gear set on a particular school; trawl may drag through a number of schools.</p> <p>21. Gill nets may catch Atlantic sturgeon. Also seals and harbor porpoises. Fixed gear interactions with turtles. No TEDS.</p> <p>22. Saltonstall Kennedy research set aside program. Some States and some universities carry out independent work.</p> <p>23. Tagging project 2011 – 50,000 tags.</p> <p>24. Predators are tuna and large sharks.</p> <p>25. Annual work plan of Centre is related to FMPs. Information from surveys, observers and landings. There is a broad suite of auditing procedures.</p> <p>26. The Information Quality Act covers standards and expectations.</p> <p>27. Stock assessments all peer reviewed.</p> <p>28. From April, 2011 there is a 3 year project on discards for all fleets and all gears.</p>
1.12.10	<p>New Bedford Richard Blades: Fisherman Ian Parente: Fisherman William McCann Fisherman Richard Canastra: NB Auction</p>	<p>1. The fishermen used to target SD and catch 100,000lbs – 150,000 lbs. Now density of fish is so great that by catch is virtually nothing.</p> <p>2. Bycatch at some times of year. One string is equal to 10 nets.</p> <p>3. Min mesh size is 6½” - most fish 7” - 7½” to catch bigger individuals.</p> <p>4. Little sakes in by catch used as bait in lobster fishery. Also large skates. Minimal cod. All reported.</p> <p>5. Observer coverage 20 % - 25 % monkfish sector and flounders.</p> <p>6. Usually it is closer to landing port to fish outside of 3 mile limit; inside also dirtier water.</p> <p>7. If fishing for monk fish punch data into VMS; if declare out of fishery then not fishing for monk fish or scallop.</p> <p>8. Out of fishery – 50 lbs. Monkfish tails 3.32 conversion factor; 500 lbs. skate wings 2.3 conversion factor. 3,000 lbs. SD.</p> <p>9. Put bigger mesh when targeting monk and skate.</p> <p>10. SD nod-a-s; open TAC. End of August close fishery. 3 lbs. minimum size.</p> <p>11. Long liners will direct.</p> <p>12. Many owners have several vessels but only one fishing at any one time. The vessels are for different fisheries.</p> <p>13. No cod catch; interaction with birds is when they feed on waste; turtles – in 25 years only caught one turtle in Gulf of Maine. In Southern States with warmer water more turtles but at that time no one is fishing. Interactions noted in log books.</p> <p>14. There are interactions with harbor porpoise- have breakaways and also pingers.</p> <p>15. Buoy lines marked coded by fishery.</p> <p>16. If gill nets lost they “roll up” and are biodegradable.</p> <p>17. Fish on muddy bottoms – hard bottoms taken by lobster gear.</p> <p>18. Down force on anchors to stop buoy lines surfacing.</p> <p>19. There are higher discards when gear soak time is longer. Avoid discards as too “dirty”. High discards in directed cod fishery. On longer</p>

		<p>trips SDs won't last. No processing on-board.</p> <p>20. Weekly limit would make more sense.</p> <p>21. State fish managers have agendas. RI no stakeholder representation. 50 % DSWM. 38 % observers.</p>
1.12.10	<p>New Bedford State of Massachusetts, Fisheries Division David Pierce</p>	<ol style="list-style-type: none"> 1. Stock of females has reached its target and this has led to the overall quota being increased to 20 mill. lb, which is less than the target F and so precautionary. 2. With the new approach the fishery management is obliged to be precautionary. 3. Increased input by scientists through committee has led to approach being more ecosystem orientated. 4. In previous years the approach was to have an "exit" fishery due to perceived role of SD as a predator. 5. Initially thought the species only ate jelly fish, but later concern on about impact on recovery of other fish stocks. 6. No habitat concerns of fishery. 7. In Mass no gill netting at night; a strike set, 8. NO directed fishery on SD by trawlers. 9. There has been a long history of gear regulations; from the 1930s to stop gear conflicts. 10. There is now sector management with hard quotas; ITQs are illegal but they have been introduced. 11. Sectors based on historic catch – lease and sell. 12. There is less fishing effort so reduced by catch of SD. 13. Set gear to avoid interactions with ETP species. 14. Incentives from management will grow when fishermen have to pay for MCS. 15. There have been legal challenges when quota was too scarce or individuals did not gain a license. Goes to Attorney General. 16. ASMFC works to take decisions out of hands of States. 17. There are specific laws in individual States. 18. Priorities of States are different; some may have greater interest in recreational. 19. There are direct meetings with stakeholders to discuss issues. 20. For ISFMP there are scoping meetings and public hearings on amendment proposals. 21. There are also news releases, web site, automatic emails. 22. There have been some action alerts – Coalition for Marine Conservation. 23. States implicitly adopt ASMFC FMP. MA has own strategic plan. 24. MA promotes hook and small scale fisheries to maximize socio-economic benefits. 25. Gill nets preempt fishing grounds. 26. Cooperative enforcement efforts with NMFS. Amount of surveillance down due to need to prioritize homeland security. 27. Anyone who breaks regulations has risk of losing license at adjudicating hearing. 28. On research there are a number of different projects that would benefit managers. 29. But no research plan per se. 30. May be cooperative research with other States. 31. State reviews management plan on an ad hoc basis, with a periodic review of measures. 32. There is permanent evaluation on compliance and compliance reports are publically available. On the Councils there are the SD monitoring committees.

2.12.10	Dover, DE MAMFC Jim Armstrong Jessica Coakley Richard Seagraves	<ol style="list-style-type: none"> 1. MAFMC has lead on fishery that is co-managed with NEFMC. The two meet separately. 2. The introduction of the SSC has set high standard. Meetings are minuted, transcripts area available. 3. Habitat impacts are limited and temporary in nature. 4. No evidence of draggers trawling through static gear. 5. Tech Memo 182 Stephenson – assemblage of gear impact literature and expert opinions. 6. MAMFC is proactive in approach to development. 7. The advisory committee makes decisions by consensus, with minority opinions. 8. The Council recommends to NMFS and so suffered legal challenge. 9. Need to maintain federal standards. 10. MAFMC has no major issues with SWD fishery. 11. The decision making process is clearly open. 12. There are annual specifications. 13. For amendments to the FMP there are many meetings with heavy stakeholder involvement. 14. The Council used to have many more fishermen participating. 15. The Federal process is laborious and the level of review may be considerable. 16. There are 7 objectives for fisheries management. 17. There are Committees to keep Council informed of trends. The Law enforcement committee meets 6 times a year. 18. Amendment 3 research set aside program up to 3 % of quota. 19. The assessment makes research recommendations.
3.12.10	Washington DC: AFMC Bob Beal Chris Vonderweidt	<ol style="list-style-type: none"> 1. Atlantic Coast Act. 2. Vision statement – restore all stocks by 2015. 24 stocks. Precautionary approach mandated. Boards follow technical advice. 3. FMP does not consider incentives. 4. Objectives – 10 year standard under Mag. Stev. 5. It is possible and legal for States to set a higher quota than recommended. There are 7 stocks similar to SD where quota has been set higher. 6. There has been an example of a law suit: it concerned river herring when Earth Justice challenged AFMC, 15 States and the Federal authorities that not enough was being done to protect the species as a by-catch in small mesh fisheries. Lost lawsuit. It is the Commission that is sued not individuals. 7. There is analogous state level law to support AFMC. 8. Individual States may differ on legal framework for ETP conservation. 9. Overages federal Amendment 3. 10. Overages on annual quotas occur due to late spike in landings or delay in receiving dealer reports. 11. The States can close a fishery quickly. 12. Uncertainty of possible catches in 2015 to 2020 due to the impact of weak year classes coming through the fishery. 13. Delaware, Florida, South Carolina and Georgia due to de minimis provisions, so no monitoring of landings or state controls. 14. If a State is intentionally out of compliance the Federal authorities can step in and impose a moratorium on fishing. This has happened e.g. in Maine.

		<ul style="list-style-type: none"> 15. Plan review team reviews plan on an annual basis. 16. Maryland terrapin. 17. No ecosystem in FMP. 18. In scoping document for amendment 3 regional split of annual TAC – ME to CT 58 %, NY to VA 26 % and NC 16 %. Southern States looking for individual state quota that may be transferable. 19. SSC has lot of power and this has led to fishermen being frustrated. 20. US fishermen not organized on east coast. To an extent there is fisherman fatigue with process. 21. All meetings open to the public and public meetings in each State before States met together. 22. There is a 30 day public comment period. There is a technical committee and advisory panels. And a Law enforcement committee.
3.12.10	<p>Washington DC: Ocean Foundation / Shark Advocates International Sonia Fordham</p>	<ul style="list-style-type: none"> 1. There were no particular issues on retained and discarded by-catch for thorny skate, cusk and wolf fish but these should be reviewed to confirm if there are any interactions with the SD fisheries. 2. There are other skates of interest – barndoor and smooth. 3. There had been an issue with the by catch of dolphin in the gill net fishery, but brought up as the directed SD fishery was closed. The current situation was unknown, especially as the catch has increased. In the dolphin recovery plan it was assumed that all fisheries would close down. 4. There should be consideration of impacts on bottom from trawling and the impact of lost gill nets and other gear through ghost fishing. 5. Ecosystem approach is a process that will refine management approach. There is a low abundance of ground fish due to human intervention. Jason Link shows that SD is negatively impacting skates. 6. There is respect for the work of the science center. But it is difficult to understand the speed of recovery of the SD stock but these may be related to a change in the definition of BRPs. The issue is whether or not the stock has been rebuilt; perhaps on biomass but a question mark against size (few females > 100 cm) and population is still not balanced as it should be. 7. This leads to how to deal with uncertainty; smaller females may have lower fecundity and weak off-spring. Is this issue being adequately addressed and what is the fate of those pups? 8. A slow growing shark indicates the need for caution in setting BRPs. 9. There has been a changed migration with move in-shore and greater interaction with recreational fishermen; why has the migration pattern changed is an open question. 10. It may be premature for certification even if it appears that SD is going the right way. 11. An issue for management in 1994 was the targeting of large females. A quota to experiment with smaller males was not a success. The continued targeting of large females is a source of concern. There may form an issue for MSC in terms of public relations. 12. NMFS meets national standards. AFMC – has not met some with year-on-year setting the TAC above biological advice. As with summer flounder. AFMC has no formal link with the Federal approach and there is concern that this will continue. There has been a disjoint in the Federal and State quotas, with State quotas using Massachusetts independent assessments. Further, there is not a good history of State licensed boats staying within quota, and in some years the catch has been double the TAC. 13. There was no agreement on stock between US and Canadian scientists on TRAC. If Canada agrees to a joint quota then the overall catch could increase. However, there is no immediate hope for bilateral management. 14. MSC certification may add to market demand and increase fishing pressure. This may increase targeting of pregnant females. MSC certification may be a disincentive to sustainable fishing.

		<ul style="list-style-type: none"> 15. There may be a perverse incentive to fish out SD in order to increase the availability of groundfish. 16. On discards there is an issue of treatment on-board that may affect the survivability of SD discards. 17. The Federal shark plan allows no finning or tailing. 18. There are concerns about the timeliness of catch reporting. 19. Sharks are susceptible to overfishing due to slow growth, age-at-maturity and low fecundity. But there is a lot of information on the biology of the species. 20. In management process there is ample opportunity for comment. A lot depends on personalities. At the level of the Commission there are greater problems in raising issues. Previously the possibility had been considered of taking AFMC to court for overfishing. There is no civil provision under the law. 21. There is a perception that comment is curtailed, and recent meeting allowed for new rules. 22. The original FMP was unanimously approved. MAFMC had forthright management due to overfishing and when writing was on the wall there was no directed fishery. Massachusetts held up the Federal Plan and this led to Emergency Regulations.
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10 STAKEHOLDER CONSULTATION

10.1 Stakeholder Consultation

A number of stakeholders were identified and consulted specifically by Moody Marine, with meetings held as requested during the site visit.

Information was made publicly available at the following stages of the assessment (table 8):

Table 8: Timetable on the Provision of Information

Date	Purpose	Media
August 3, 2010	Announcement of assessment	Direct E-mail/letter Notification on MSC website Advertisement in press
August 3, 2010	Assessment timetable	Direct E-mail Notification on MSC website
August 3, 2010	Notification of Assessment Team nominees	Direct E-mail Notification on MSC website
17 September, 2010	Notification of Assessment Team nominees	Direct E-mail Notification on MSC website
17 September, 2010	Notification of intent to use MSC FAM Standard Assessment Tree	Direct E-mail Notification on MSC website
17 September, 2010	Notification of assessment visit and call for meeting requests	Direct E-mail Notification on MSC website
8 October, 2010	Notification of rescheduling of assessment visit and call for meeting requests	Direct E-mail Notification on MSC website
29 November – 3 December, 2010	Assessment visit	Meetings
22 February, 2011	Notification: Revised assessment timeline	Direct E-mail Notification on MSC website
18 – 20 April, 2011	Scoring meeting (Halifax)	
4 May, 2011	Nomination of Proposed Peer reviewers	Direct E-mail Notification on MSC website
13 May, 2011	Clarification of UoC	Direct E-mail Notification on MSC website
23 September, 2011	Notification: Revised assessment timeline	Direct E-mail Notification on MSC website
13 October, 2011	Notification: Stakeholder consultation on new information	Direct E-mail Notification on MSC website
13 December, 2011	Notification: Peer review time scale.	Direct E-mail Notification on MSC website
28 February 2012	Notification of Public Draft Report	Direct E-mail Notification on MSC website
17 July 2012	Notification of Final Report	Direct E-mail Notification on MSC website

10.2 Stakeholder Issues

10.2.1 Approach

Issues were identified in three ways:

1. In interviews during the site visit (see above).
2. In specific submissions (see Appendix 2).
3. In comments following consideration of the public draft report (see Appendix 4).

11 OBSERVATIONS AND SCORING

11.1 Introduction to scoring methodology

The MSC Principles and Criteria set out the requirements of certified fishery. These Principles and Criteria have been developed into a standard (Fishery Assessment Methodology) assessment tree - Performance Indicators and Scoring Guideposts - by the MSC, which is used in this assessment.

The Performance Indicators (PIs) have been released on the MSC website. In order to make the assessment process as clear and transparent as possible, each PI has three associated Scoring Guideposts (SGs) which identify the level of performance necessary to achieve 100, 80 (a pass score), and 60 scores for each Performance Indicator; 100 represents a theoretically ideal level of performance and 60 a measurable shortfall.

For each Performance Indicators, the performance of the fishery is assessed as a 'score'. In order for the fishery to achieve certification, an overall weighted average score of 80 is necessary for each of the three Principles and no Indicator should score less than 60. As it is not considered possible to allocate precise scores, a scoring interval of five is used in evaluations. As this represents a relatively crude level of scoring, average scores for each Principle are rounded to the nearest whole number.

Weights and scores for the Fishery are presented in the scoring table (Appendix 1).

12 LIMIT OF IDENTIFICATION OF LANDINGS FROM THE FISHERY

12.1 Traceability

The CAB has to determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB considers the following points and their associated risk for the integrity of certified products.

- **The systems in use.** Vessels land SD in a large number of places along the east coast of the USA from Maine in the north to Florida in the south. All vessels have to be licensed. Fish is purchased by agents who sell and transport the fish. Vessel trip reports are cross checked with fish buyer reports to allow enforcement officials to forensically check data and identify discrepancies between declared landing data and fish buying data. The fish that will be exported is transported from the point of landing to the fish processors located in New Bedford and Gloucester. Chain of custody would need to be established after the first point of landing to ensure that first hand buyers and agents have the procedures in place to reduce the potential for contaminating certified product with non-certified product.
- **The possibility of vessels fishing outside the unit of certification.** The UoC account for more than 95 % of total landings including landings from the gears that are not certified and landings by all gears in the North east seaboard states that are not part of the Unit of Certification. The processors in the client group are chain of custody certified and their certificates will be extended to cover spiny dogfish. When the processors buy dogfish the sales document will clearly state: (i) the state where the fish is landed; (ii) that the supplying vessel is part of the unit of certification; (iii) and that the harvest was made by one of the gears covered by the unit of certification.
- **The opportunity of substitution of certified with non-certified fish prior or at landing.** This is considered highly unlikely. The main processors, clients of the certification, will depend on the robustness of the traceability system to sell their product in the export markets that demand certified product, and have undertaken to ensure their systems preserve the integrity of the carried fishery.
- **At-sea processing activities.** SD is not processed at sea. No tailing or finning is allowed.
- **Any transshipment activities.** In the past, occasionally SD would be trans-shipped at-sea if the vessel was above its landing quota; with the increase in the limit this is less likely to happen.
- **The number and/or location of points of landing.** There are a large number of landing places; however product is sourced at a limited number due to the low value of the product and the high cost of transport.
- **The robustness of the management systems.** It is reported that cross checking of VTR and dealer reports is robust.

12.2 Eligibility to enter Chain of Custody

Any landings by vessels licensed to fish SD using any of the gears covered and landing into the named States are eligible to enter the chain of custody. The names of vessels licensed are too numerous to be included in an annex (see annex 5) but may be cross checked against official records – see <http://www.nero.noaa.gov/permits/data/>.. Chain of Custody will commence following landing of the fish by an eligible vessel. The list of landing places is also numerous and must be defined as any landing place in the States covered by the certificate that are approved for landing by Federal and State Authorities. The list of permitted dealers found at <http://www.nero.noaa.gov/permits/data/> shows the base port.

Products landed by any of the vessels listed and landed in the nominated States are eligible to enter further chain of custody. The sale of certified spiny dogfish is limited to members of the client group.

Where a member of the client group purchases SD directly from a licensed fishing vessel in any of the States covered by the certification, the chain of custody begins with the client company that shall establish the procedures necessary to ensure separation of certified product with non-certified product that may be transported on the same truck. In the case that a member of the client group buys fish through an intermediary then the intermediary must be certified according to the MSC chain of custody standard. This includes off-loaders that take ownership of the product i.e. they invoice the member of the client group for the the product including the off loading service. Where the off loader only invoices the member of the client group fpor the service, the off loader will be covered if listed as sub-contractor in the processing company's chain of custody certificate. This is the same case as with the transport company (see MSC CR 17.1.2.4, 17.1.2.5 and 27.12.2.1).

Where fish is transshipped at sea the receiving vessel must be certified according to the MSC chain of custody with records to show the origin of the trans-shipped fish and proof that it was harvested by a certified vessel. In the event that the receiving vessel does not have chain of custody certification then that vessel will not be able to land any certified product.

12.3 Target Eligibility Date

The target eligibility date for product from the fishery (as and when certified) to bear the MSC label is June 11th, 2012. The client group has established the systems required to reduce the risk of certified SD being contaminated by non-certified product.

13 ASSESSMENT RESULTS

13.1 US Federal Waters: Gill Net

The performance of the United States Atlantic Fishery for Spiny Dogfish (*Squalus acanthias*) using gill net gear in federal waters in relation to MSC Principles 1, 2 and 3 is shown in Table 10 and summarized below. This fishery attained a score of 80 or more against each of the MSC Principles and did not score less than 60 against any PI.

Overall weighted Principle-level scores	
Principle 1 - Target species	84.4
Principle 2 - Ecosystem	81.0
Principle 3 - Management	91.3

It is therefore determined that the UNITED STATES ATLANTIC FISHERY FOR SPINY DOGFISH (SQUALUS ACANTHIAS) USING GILLNET GEAR IN US FEDERAL WATERS BE CERTIFIED according to the Marine Stewardship Council Principles and Criteria for Sustainable Fisheries. This UoC attained a score of < 80 against four of the PIs. This has led to conditions to certification being raised (see below). Once these conditions have been satisfied these PIs will be re-scored.

13.2 US Federal Waters: Long Line

The performance of the United States Atlantic Fishery for Spiny Dogfish (*Squalus acanthias*) using long line gear in federal waters in relation to MSC Principles 1, 2 and 3 is shown in Table 11 and summarized below. This fishery attained a score of 80 or more against each of the MSC Principles and did not score less than 60 against any PI.

Overall weighted Principle-level scores	
Principle 1 - Target species	84.4
Principle 2 - Ecosystem	81.3
Principle 3 – Management	92.8

It is therefore determined that the UNITED STATES ATLANTIC FISHERY FOR SPINY DOGFISH (SQUALUS ACANTHIAS) USING LONG LINE GEAR IN US FEDERAL WATERS BE CERTIFIED according to the Marine Stewardship Council Principles and Criteria for Sustainable Fisheries. This UoC attained a score of <80 against three of the PIs. This has led to conditions to certification being raised (see below). Once these conditions have been satisfied these PIs will be re-scored.

13.3 US Federal Waters: Trawl

The performance of the United States Atlantic Fishery for Spiny Dogfish (*Squalus acanthias*) using trawl gear in federal waters in relation to MSC Principles 1, 2 and 3 is shown in Table 12 and summarized below. This fishery did not attain a score of 80 or more against MSC Principle 2.

Overall weighted Principle-level scores	
Principle 1 - Target species	84.4
Principle 2 - Ecosystem	81.3
Principle 3 – Management	92.8

It is therefore determined that the UNITED STATES ATLANTIC FISHERY FOR SPINY DOGFISH (SQUALUS ACANTHIAS) USING TRAWL GEAR IN US FEDERAL WATERS BE CERTIFIED according to the Marine Stewardship Council Principles and Criteria for Sustainable Fisheries. This UoC attained a score of <80 against three of the PIs. This has led to conditions to

certification being raised (see below). Once these conditions have been satisfied these PIs will be re-scored.

13.4 US State Waters: Gill Net

The performance of the United States Atlantic Fishery for Spiny Dogfish (*Squalus acanthias*) using gill net gear in state waters in relation to MSC Principles 1, 2 and 3 is shown in Table 13 and summarized below. This fishery attained a score of 80 or more against each of the MSC Principles and did not score less than 60 against any PI.

Overall weighted Principle-level scores	
Principle 1 - Target species	84.4
Principle 2 - Ecosystem	81.0
Principle 3 – Management	91.8

It is therefore determined that the UNITED STATES ATLANTIC FISHERY FOR SPINY DOGFISH (SQUALUS ACANTHIAS) USING GILLNET GEAR IN US STATE WATERS BE CERTIFIED according to the Marine Stewardship Council Principles and Criteria for Sustainable Fisheries. This UoC attained a score of < 80 against four of the PIs. This has led to conditions to certification being raised (see below). Once these conditions have been satisfied these PIs will be re-scored.

13.5 US State Waters: Long Line

The performance of the United States Atlantic Fishery for Spiny Dogfish (*Squalus acanthias*) using long line gear in state waters in relation to MSC Principles 1, 2 and 3 is shown in Table 14 and summarized below. This fishery attained a score of 80 or more against each of the MSC Principles and did not score less than 60 against any PI.

Overall weighted Principle-level scores	
Principle 1 - Target species	84.4
Principle 2 - Ecosystem	81.3
Principle 3 – Management	92.3

It is therefore determined that the UNITED STATES ATLANTIC FISHERY FOR SPINY DOGFISH (SQUALUS ACANTHIAS) USING LONG LINE GEAR IN US STATE WATERS BE CERTIFIED according to the Marine Stewardship Council Principles and Criteria for Sustainable Fisheries. This UoC attained a score of < 80 against three of the PIs. This has led to conditions to certification being raised (see below). Once these conditions have been satisfied these PIs will be re-scored.

13.6 US State Waters: Trawl

The performance of the United States Atlantic Fishery for Spiny Dogfish (*Squalus acanthias*) using trawl gear in state waters in relation to MSC Principles 1, 2 and 3 is shown in Table 15 and summarized below. This fishery did not attain a score of 80 or more against MSC Principle 2.

Overall weighted Principle-level scores	
Principle 1 - Target species	84.4
Principle 2 - Ecosystem	81.3
Principle 3 – Management	92.3

It is therefore determined that the UNITED STATES ATLANTIC FISHERY FOR SPINY DOGFISH (SQUALUS ACANTHIAS) USING TRAWL GEAR IN US STATE WATERS BE CERTIFIED according to the Marine Stewardship Council Principles and Criteria for Sustainable Fisheries. This UoC attained a score of <80 against three of the PIs. This has led to conditions to certification being raised (see below). Once these conditions have been satisfied these PIs will be re-scored

Table 9: Gill Net Gear in Federal Waters: PIs - Weightings & Scoring Table

P	Component	Performance Indicator (PI)		Score	Wt Score
1	Outcome	1.1.1	Stock status	80	20.00
		1.1.2	Reference points	80	20.00
		1.1.3	Stock rebuilding	0	0.00
	Management	1.2.1	Harvest strategy	95	11.88
		1.2.2	Harvest control rules & tools	80	10.00
		1.2.3	Information & monitoring	80	10.00
		1.2.4	Assessment of stock status	100	12.50
	2	Retained species	2.1.1	Outcome	75
2.1.2			Management	80	5.33
2.1.3			Information	75	5.00
Bycatch		2.2.1	Outcome	80	5.33
		2.2.2	Management	85	5.67
		2.2.3	Information	80	5.33
ETP species		2.3.1	Outcome	80	5.33
		2.3.2	Management	85	5.67
		2.3.3	Information	65	4.33
Habitats		2.4.1	Outcome	80	5.33
		2.4.2	Management	95	6.33
		2.4.3	Information	85	5.67
Trophic function		2.5.1	Outcome	80	5.33
		2.5.2	Management	80	5.33
		2.5.3	Information	90	6.00
3	Governance and policy	3.1.1	Legal & customary framework	90	11.25
		3.1.2	Consultation, roles &	100	12.50
		3.1.3	Long term objectives	100	12.50
		3.1.4	Incentives for sustainable fishing	80	10.00
	Fishery specific management system	3.2.1	Fishery specific objectives	100	10.00
		3.2.2	Decision making processes	90	9.00
		3.2.3	Compliance & enforcement	60	6.00
		3.2.4	Research plan	100	10.00
		3.2.5	Management performance	100	10.00

Table 10: Long Line Gear in Federal Waters: PIs - Weightings & Scoring Table

P	Component	Performance Indicator (PI)		Score	Wt Score
1	Outcome	1.1.1	Stock status	80	20.00
		1.1.2	Reference points	80	20.00
		1.1.3	Stock rebuilding	0	0.00
	Management	1.2.1	Harvest strategy	95	11.88
		1.2.2	Harvest control rules & tools	80	10.00
		1.2.3	Information & monitoring	80	10.00
		1.2.4	Assessment of stock status	100	12.50
2	Retained species	2.1.1	Outcome	80	5.33
		2.1.2	Management	85	5.67
		2.1.3	Information	75	5.00
	Bycatch	2.2.1	Outcome	80	5.33
		2.2.2	Management	85	5.67
		2.2.3	Information	80	5.33
	ETP species	2.3.1	Outcome	80	5.33
		2.3.2	Management	80	5.33
		2.3.3	Information	65	4.33
	Habitats	2.4.1	Outcome	80	5.33
		2.4.2	Management	95	6.33
		2.4.3	Information	85	5.67
	Trophic function	2.5.1	Outcome	80	5.33
		2.5.2	Management	80	5.33
		2.5.3	Information	90	6.00
3	Governance and policy	3.1.1	Legal & customary framework	90	11.25
		3.1.2	Consultation, roles &	100	12.50
		3.1.3	Long term objectives	100	12.50
		3.1.4	Incentives for sustainable fishing	80	10.00
	Fishery specific management system	3.2.1	Fishery specific objectives	100	10.00
		3.2.2	Decision making processes	90	9.00
		3.2.3	Compliance & enforcement	75	7.50
		3.2.4	Research plan	100	10.00
		3.2.5	Management performance	100	10.00

Table 11: Trawl Gear in Federal Waters: PIs - Weightings & Scoring Table

P	Component	Performance Indicator (PI)		Score	Wt Score
1	Outcome	1.1.1	Stock status	80	20.00
		1.1.2	Reference points	80	20.00
		1.1.3	Stock rebuilding	0	0.00
	Management	1.2.1	Harvest strategy	95	11.88
		1.2.2	Harvest control rules & tools	80	10.00
		1.2.3	Information & monitoring	80	10.00
		1.2.4	Assessment of stock status	100	12.50
	Retained species	2.1.1	Outcome	80	5.33
		2.1.2	Management	85	5.67
		2.1.3	Information	75	5.00
2	Bycatch	2.2.1	Outcome	80	5.33
		2.2.2	Management	85	5.67
		2.2.3	Information	80	5.33
	ETP species	2.3.1	Outcome	80	5.33
		2.3.2	Management	80	5.33
		2.3.3	Information	65	4.33
	Habitats	2.4.1	Outcome	80	5.33
		2.4.2	Management	95	6.33
		2.4.3	Information	85	5.67
	Trophic function	2.5.1	Outcome	80	5.33
		2.5.2	Management	80	5.33
		2.5.3	Information	90	6.00
	Governance and policy	3.1.1	Legal & customary framework	90	11.25
		3.1.2	Consultation, roles &	100	12.50
		3.1.3	Long term objectives	100	12.50
		3.1.4	Incentives for sustainable fishing	80	10.00
	Fishery specific management system	3.2.1	Fishery specific objectives	100	10.00
		3.2.2	Decision making processes	90	9.00
		3.2.3	Compliance & enforcement	75	7.50
		3.2.4	Research plan	100	10.00
		3.2.5	Management performance	100	10.00

Table 12: Gill Net Gear in State Waters: PIs - Weightings & Scoring Table

P	Component	Performance Indicator (PI)		Score	Wt Score
1	Outcome	1.1.1	Stock status	80	20.00
		1.1.2	Reference points	80	20.00
		1.1.3	Stock rebuilding	0	0.00
	Management	1.2.1	Harvest strategy	95	11.88
		1.2.2	Harvest control rules & tools	80	10.00
		1.2.3	Information & monitoring	80	10.00
		1.2.4	Assessment of stock status	100	12.50
2	Retained species	2.1.1	Outcome	75	5.00
		2.1.2	Management	80	5.33
		2.1.3	Information	75	5.00
	Bycatch	2.2.1	Outcome	80	5.33
		2.2.2	Management	85	5.67
		2.2.3	Information	80	5.33
	ETP species	2.3.1	Outcome	80	5.33
		2.3.2	Management	85	5.67
		2.3.3	Information	65	4.33
	Habitats	2.4.1	Outcome	80	5.33
		2.4.2	Management	95	6.33
		2.4.3	Information	85	5.67
	Trophic function	2.5.1	Outcome	80	5.33
		2.5.2	Management	80	5.33
		2.5.3	Information	90	6.00
3	Governance and policy	3.1.1	Legal & customary framework	90	11.25
		3.1.2	Consultation, roles &	100	12.50
		3.1.3	Long term objectives	100	12.50
		3.1.4	Incentives for sustainable fishing	80	10.00
	Fishery specific management system	3.2.1	Fishery specific objectives	100	10.00
		3.2.2	Decision making processes	90	9.00
		3.2.3	Compliance & enforcement	65	6.50
		3.2.4	Research plan	100	10.00
		3.2.5	Management performance	100	10.00

Table 13: Long Line Gear in State Waters: PIs - Weightings & Scoring Table

P	Component	Performance Indicator (PI)		Score	Wt Score
1	Outcome	1.1.1	Stock status	80	20.00
		1.1.2	Reference points	80	20.00
		1.1.3	Stock rebuilding	0	0.00
	Management	1.2.1	Harvest strategy	95	11.88
		1.2.2	Harvest control rules & tools	80	10.00
		1.2.3	Information & monitoring	80	10.00
		1.2.4	Assessment of stock status	100	12.50
	Retained species	2.1.1	Outcome	80	5.33
		2.1.2	Management	85	5.67
		2.1.3	Information	75	5.00
2	Bycatch	2.2.1	Outcome	80	5.33
		2.2.2	Management	85	5.67
		2.2.3	Information	80	5.33
	ETP species	2.3.1	Outcome	80	5.33
		2.3.2	Management	80	5.33
		2.3.3	Information	65	4.33
	Habitats	2.4.1	Outcome	80	5.33
		2.4.2	Management	95	6.33
		2.4.3	Information	85	5.67
	Trophic function	2.5.1	Outcome	80	5.33
		2.5.2	Management	80	5.33
		2.5.3	Information	90	6.00
	Governance and policy	3.1.1	Legal & customary framework	90	11.25
		3.1.2	Consultation, roles &	100	12.50
		3.1.3	Long term objectives	100	12.50
		3.1.4	Incentives for sustainable fishing	80	10.00
	Fishery specific management system	3.2.1	Fishery specific objectives	100	10.00
		3.2.2	Decision making processes	90	9.00
		3.2.3	Compliance & enforcement	70	7.00
		3.2.4	Research plan	100	10.00
		3.2.5	Management performance	100	10.00

Table 14: Trawl Gear in State Waters: PIs - Weightings & Scoring Table

P	Component	Performance Indicator (PI)		Score	Wt Score
1	Outcome	1.1.1	Stock status	80	20.00
		1.1.2	Reference points	80	20.00
		1.1.3	Stock rebuilding	0	0.00
	Management	1.2.1	Harvest strategy	95	11.88
		1.2.2	Harvest control rules & tools	80	10.00
		1.2.3	Information & monitoring	80	10.00
		1.2.4	Assessment of stock status	100	12.50
	Retained species	2.1.1	Outcome	80	5.33
		2.1.2	Management	85	5.67
		2.1.3	Information	75	5.00
2	Bycatch	2.2.1	Outcome	80	5.33
		2.2.2	Management	85	5.67
		2.2.3	Information	80	5.33
	ETP species	2.3.1	Outcome	80	5.33
		2.3.2	Management	80	5.33
		2.3.3	Information	65	4.33
	Habitats	2.4.1	Outcome	80	5.33
		2.4.2	Management	95	6.33
		2.4.3	Information	85	5.67
	Trophic function	2.5.1	Outcome	80	5.33
		2.5.2	Management	80	5.33
		2.5.3	Information	90	6.00
	Governance and policy	3.1.1	Legal & customary framework	90	11.25
		3.1.2	Consultation, roles &	100	12.50
		3.1.3	Long term objectives	100	12.50
		3.1.4	Incentives for sustainable fishing	80	10.00
	Fishery specific management system	3.2.1	Fishery specific objectives	100	10.00
		3.2.2	Decision making processes	90	9.00
		3.2.3	Compliance & enforcement	70	7.00
		3.2.4	Research plan	100	10.00
		3.2.5	Management performance	100	10.00

13.7 Conditions

13.7.1 Introduction

As a standard requirement of the MSC certification methodology, the fishery shall be subject to (as a minimum) annual surveillance audits. These audits shall be publicized and reports made publicly available.

The assessment team has set conditions for continuing certification that the client is required to address in order to meet the conditions set. The conditions are applied to improve performance to at least the 80 level within a period set by the certification body but no longer than the term of the certification.

As a standard condition of certification, the client shall develop an “Action Plan” for meeting the conditions for continued certification. The approved action plan is described in the conditions below. This action plan confirms: (i) how the conditions and milestones will be addressed, (ii) by whom and the specified time period; (iii) how the action(s) is expected to improve the performance of the fishery, and (iv) how the milestones and final outcome will be assessed in each audits by the Certification Body.

In developing these conditions and the related action plan, the audit team and client have consulted with all relevant entities where it has been judged that the compliance with the conditions is likely to require investment of time or money by these entities, or changes to management arrangements or regulations, or re-arrangement of research priorities by these entities. Such consultation is required to satisfy the auditors that the conditions are both achievable by the certification client and realistic in the time frame specified.

13.7.2 Condition 1: Federal Gillnet Fishery

Condition 1: Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends	
PI 2.1.1	Status: The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species.
Rationale	<p>At SG80 there is one scoring issue: Main retained species are highly likely to be within biologically based limits, or if outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding. The relevant retained species is:</p> <p><u>Atlantic cod</u>. The auditors concluded that both scoring issues of SG60 are met: the stocks are outside biological limits but there are measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding. The SG80 scoring issue is not met as the management measures in place have not been demonstrably effective in rebuilding the stocks. Accordingly, the two SG100 scoring issues are not met. The score is 60.</p>
Condition	In the federal spiny dogfish gill net fishery there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding of the stocks of Atlantic cod in the Gulf of Maine and Georges Bank.
Milestones	<ol style="list-style-type: none"> 1. By the first annual audit, and dependent on the findings of the most recent stock assessment, if research indicates that there is overfishing of the Gulf of Maine cod stock or if the fishery is categorized as overfished, then there will be written documentation that options for management alternatives to reduce the impact of the Federal gillnet fishery for Spiny Dogfish on Atlantic cod in the Gulf of Maine have been considered. 2. At the first annual audit, and dependent on the findings of the most recent stock assessment, if research indicates that there is overfishing of the Georges Bank cod Stock and/or if the fishery is categorized as overfished, then there will be written documentation that options for management alternatives to reduce the impact of the Federal gillnet fishery for Spiny Dogfish on Atlantic cod in the Georges Bank have been considered. 3. By the second annual audit, if the need for additional management measures was identified as a result of the most recent stock assessment of Gulf of Maine cod, a partial strategy will have been introduced to reduce the impact of the Federal gillnet fishery for Spiny Dogfish on Atlantic cod in the Gulf of Maine. 4. By the second annual audit, if the need for additional management measures was identified as a result of the most recent stock assessment of Georges Bank cod, a partial strategy will have been introduced to reduce the impact of the Federal gillnet fishery for Spiny Dogfish on Atlantic cod in Georges Bank. 5. The strategies should be adjusted as required so that by the fourth annual audit it is found that the introduced strategy has been demonstrably effective.
Client Action	Prior to the first annual audit, the clients will review the most recent stock assessment findings on GOM cod. If research indicates that there is

Plan	<p>overfishing of the GOM cod Stock or if the GOM cod fishery is categorized as overfished, the clients will meet with Federal managers to discuss options for improving data collection to allow for reducing the impact of Atlantic cod catches in Federal waters of the Federal gill net fishery for Spiny Dogfish. Options could include shortening soak times of fixed gear, setting fixed gear outside known spawning grounds, avoiding setting fixed gear during spawning events, requiring non-federally permitted vessels to participate in an observer program and/or to submit vessel trip reports. Documentation of these options and discussions will be provided to the audit team at the first annual audit.</p> <p>Prior to the first annual audit, the clients will review the most recent stock assessments, if there is overfishing of the GB cod stock and/or if the fishery is categorized as overfished the clients will provide the audit team with documentation from federal managers indicating that regulatory strategies are under consideration (see above for the type of measures).</p> <p>By the second annual audit a partial strategy, based on recommendations from Federal managers, will have been introduced to reduce the impact of the Federal gillnet fishery on GOM cod.</p> <p>At the second annual audit, the clients will provide the audit team with data to show that a partial strategy has been introduced to reduce the impact of the Federal gillnet fishery for Spiny Dogfish on Atlantic cod in GB.</p> <p>For audits 3 & 4 prior to recertification, the client will review the most recent stock assessment data available to advise the audit team of any change in the status of Atlantic cod stocks in GoM and GB to assess if the measures taken have been demonstrably effective.</p>
Consultation on Condition	Federal managers have agreed to work with the clients in order to facilitate the implementation of this action plan.

13.7.3 Condition 2: State Gillnet Fishery

Condition 2: Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends	
PI 2.1.1	Status: The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species.
Rationale	<p>At SG80 there is one scoring issue: Main retained species are highly likely to be within biologically based limits, or if outside the limits there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding.</p> <p>The relevant retained species is:</p> <p><u>Atlantic cod.</u> The auditors concluded that both scoring issues of SG60 are met: the stocks are outside biological limits but there are measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding. The SG80 scoring issue is not met as the management measures in place have not been demonstrably effective in rebuilding the stocks. Accordingly, the two SG100 scoring issues are not met. The score is 60.</p>
Condition	In the State spiny dogfish gill net fishery there is a partial strategy of demonstrably effective management measures in place such that the

	fishery does not hinder recovery and rebuilding of the stocks of Atlantic cod in the Gulf of Maine.
Milestones	<ol style="list-style-type: none"> 1. By the first annual audit there will be written documentation that management options to reduce the impact of the State gillnet fishery for Spiny Dogfish on Atlantic cod in the Gulf of Maine have been considered. 2. By the second annual audit a partial strategy will have been introduced to reduce the impact of the State gillnet fishery for Spiny Dogfish on Atlantic cod in the Gulf of Maine. 3. The strategies should be adjusted as required so that by the fourth annual audit it is found that the introduced strategy has been demonstrably effective.
Client Action Plan	<p>Prior to the first annual audit, the clients will meet with State managers to discuss options for allowing a reduction of the impact of Atlantic cod catches in State waters of the State gill net fishery for Spiny Dogfish. Options could include shortening soak times of fixed gear, setting fixed gear outside known spawning grounds, avoiding setting fixed gear during spawning events, requiring non-federally permitted vessels to participate in an observer program and/or to submit vessel trip reports. Documentation of these options and discussions will be provided to the audit team at the first annual audit.</p> <p>By the second annual audit a partial strategy, based on recommendations from State managers, will have been introduced to reduce the impact of the State gillnet fishery on Atlantic cod.</p> <p>For audits 3 & 4 prior to recertification, the client will review the most recent stock assessment data available to advise the audit team of any change in the status of the Atlantic cod stocks in GoM to assess if the measures taken have been demonstrably effective.</p>
Consultation on Condition	State managers have agreed to work with the clients in order to facilitate the implementation of this action plan.

13.7.4 Conditions 3 & 6: Federal Gill Net Fishery & State Gill Net Fishery

Conditions 3 & 6: Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends	
PI 2.1.3	Information / monitoring: Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species.
Rationale	<p>Under SG80 there are four issues: Qualitative information and some quantitative information are available on the amount of main retained species taken by the fishery; Information is sufficient to estimate outcome status with respect to biologically based limits; Information is adequate to support a partial strategy to manage main retained species; and Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).</p> <p>The auditors concluded that the fourth scoring issue of SG80 is not met given that it is not possible to determine the origin of the catches between federal and state waters and because we have to rely on a definition of the fishery done <i>a posteriori</i>. Because of these data limitation, the four SG100 scoring issues are not met. The overall score is 75.</p>
Condition	Data is available that allows for analysis of the catch of spiny dogfish and associated by-catch by gill net differentiated by Federal and State

	waters.
Milestones	<ol style="list-style-type: none"> 1. By the first annual audit there will be documented proof that options for improving data collection to allow for the differentiation of catch in Federal and State waters by gill netters fishing spiny dogfish have been identified and discussed. 2. By the second annual audit there will be documented proof that regulations requiring identified changes in data collection are under consideration. 3. By the third annual audit there will be documented proof that the regulations requiring identified changes in data collection have been implemented. 4. By the fourth annual audit there will be documented proof that reliable data has been collected and is available for analysis.
Client Action Plan	<p>Prior to the first annual audit, the clients will meet with Federal and State managers to discuss options for improving data collection to allow for differentiation of catches in Federal and State waters by gill netters. Options could include requiring the declaration of targeted spiny dogfish sets before they occur, requiring non-federally permitted vessels to participate in an observer program and/or to submit vessel trip reports. Documentation of these options and discussions will be provided to the audit team prior to the first annual audit.</p> <p>Prior to the second annual audit, the clients will provide the audit team with documentation from federal and state managers indicating that regulations are under consideration and by the third annual audit that such regulations have been implemented.</p> <p>Prior to the fourth annual audit, the clients will provide the audit team with data collected under the new regulations.</p>
Consultation on Condition	Federal and State managers have agreed to work with the clients in order to facilitate the implementation of this action plan.

13.7.5 Conditions 4 & 7: Federal Trawl Fishery and State Trawl Fishery

Conditions 4 & 7: Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends	
PI 2.1.3	Information / monitoring: Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species.
Rationale	<p>Under SG80 there are four issues: Qualitative information and some quantitative information are available on the amount of main retained species taken by the fishery; Information is sufficient to estimate outcome status with respect to biologically based limits; Information is adequate to support a partial strategy to manage main retained species; and Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).</p> <p>The auditors concluded that the fourth scoring issue of SG80 is not met given that it is not possible to determine the origin of the catches between federal and state waters and because we have to rely on a definition of the fishery done <i>a posteriori</i>. Because of these data limitation, the four SG100 scoring issues are not met. The overall score is 75.</p>
Condition	Data is available that allows for analysis of the catch of spiny dogfish and associated by-catch by trawlers fishing spiny dogfish differentiated by Federal and State waters.

Milestones	<ol style="list-style-type: none"> 1. By the first annual audit there will be documented proof that options for improving data collection to allow for the differentiation of catch in Federal and State waters by trawl have been identified and discussed. 2. By the second annual audit there will be documented proof that regulations requiring identified changes in data collection are under consideration. 3. By the third annual audit there will be documented proof that the regulations requiring identified changes in data collection have been implemented. 4. By the fourth annual audit there will be documented proof that reliable data has been collected and is available for analysis.
Client Action Plan	<p>Prior to the first annual audit, the clients will meet with Federal and State managers to discuss options for improving data collection to allow for differentiation of catches in Federal and State waters by trawl.</p> <p>Options could include requiring the declaration of targeted spiny dogfish sets before they occur, requiring non-federally permitted vessels to participate in an observer program and/or to submit vessel trip reports.</p> <p>Documentation of these options and discussions will be provided to the audit team prior to the first annual audit.</p> <p>Prior to the second annual audit, the clients will provide the audit team with documentation from federal and/or state managers indicating that regulations are under consideration and by the third annual audit that such regulations have been implemented.</p> <p>Prior to the fourth annual audit, the clients will provide the audit team with data collected under the new regulations. At this point all of the milestones of this condition will have been met and the Certification Body will be able to determine if the options selected by the clients meet the Certification goal of SG80 or higher.</p>
Consultation on Condition	Federal and State managers have agreed to work with the clients in order to facilitate the implementation of this action plan.

13.7.6 Conditions 5 & 8: Federal Long Line Fishery and State Long Line Fishery

Conditions 5 & 8: Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends	
PI 2.1.3	Information / monitoring: Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species.
Rationale	<p>Under SG80 there are four issues: Qualitative information and some quantitative information are available on the amount of main retained species taken by the fishery; Information is sufficient to estimate outcome status with respect to biologically based limits; Information is adequate to support a partial strategy to manage main retained species; and Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).</p> <p>The auditors concluded that the fourth scoring issue of SG80 is not met given that it is not possible to determine the origin of the catches between federal and state waters and because we have to rely on a definition of the fishery done <i>a posteriori</i>. Because of these data limitation,</p>

	the four SG100 scoring issues are not met. The overall score is 75.
Condition	Data is available that allows for analysis of the catch of spiny dogfish and associated by-catch by long liners fishing spiny dogfish differentiated by Federal and State waters.
Milestones	<ol style="list-style-type: none"> 1. By the first annual audit there will be documented proof that options for improving data collection to allow for the differentiation of catch in Federal and State waters by long line have been identified and discussed. 2. By the second annual audit there will be documented proof that regulations requiring identified changes in data collection are under consideration. 3. By the third annual audit there will be documented proof that the regulations requiring identified changes in data collection have been implemented. 4. By the fourth annual audit there will be documented proof that reliable data has been collected and is available for analysis.
Client Action Plan	<p>Prior to the first annual audit, the clients will meet with Federal and State managers to discuss options for improving data collection to allow for differentiation of catches in Federal and State waters by long line.</p> <p>Options could include requiring the declaration of targeted spiny dogfish sets before they occur, requiring non-federally permitted vessels to participate in an observer program and/or to submit vessel trip reports.</p> <p>Documentation of these options and discussions will be provided to the audit team prior to the first annual audit.</p> <p>Prior to the second annual audit, the clients will provide the audit team with documentation from federal and/or state managers indicating that regulations are under consideration and by the third annual audit that such regulations have been implemented.</p> <p>Prior to the fourth annual audit, the clients will provide the audit team with data collected under the new regulations. At this point all of the milestones of this condition will have been met and the Certification Body will be able to determine if the options selected by the clients meet the Certification goal of SG80 or higher.</p>
Consultation on Condition	Federal and State managers have agreed to work with the clients in order to facilitate the implementation of this action plan.

13.7.7 Condition 9: Federal Gill Net Fishery

Condition 9: Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.	
PI 2.3.3	Information / monitoring. Relevant information is collected to support the management of fishery impacts on ETP species, including: information for the development of the management strategy; information to assess the effectiveness of the management strategy; and information to determine the outcome status of ETP species.
Rationale	SG80 of PI 2.3.3 has two issues: Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts; and sufficient data are available to allow fishery

	<p>related mortality and the impact of fishing to be quantitatively estimated for ETP species.</p> <p>The auditors found that while information available gives estimates of incidental take of ETP species, sufficient data are not available to allow fishery related mortality and the impact of fishing to be quantitatively estimated. The overall score for PI 2.3.3 is thus 65.</p>
Condition	Sufficient data are available to allow fishery related mortality and other impacts of the federal Spiny Dogfish gill net fishery on relevant ETP species to be quantitatively estimated.
Milestones	<ol style="list-style-type: none"> 1. By the first annual audit, there will be documented evidence that options have been considered for improving data on the interactions of the Federal Gill Net Fishery for Spiny Dogfish with relevant ETP Species. 2. By the second annual audit there will be documented evidence that the preferred option for improving data on the interactions of the Federal Gill Net Fishery for Spiny Dogfish with relevant ETP Species is in the process of implementation. 3. By the third annual audit there will be documented evidence that data on the interactions of the Federal Gill Net Fishery for Spiny Dogfish with relevant ETP Species is being collected on a continuous basis. 4. By the fourth annual audit there will be an analysis of the data on the interactions of the Federal Gill Net Fishery for Spiny Dogfish with relevant ETP Species.
Client Action Plan	<p>Prior to the first annual audit, the clients will meet with federal managers and discuss options, such as, but not limited to, increased observer coverage, the use of video monitoring, and improved data recording and report options (i.e. linking takes of listed species to the Spiny Dogfish FMP proportionally based on fish catch composition), which could be used to improve data on ETP interactions by the Federal Gill Net Fishery for Spiny Dogfish.</p> <p>Notes and/or other documented evidence from these meetings will be provided to the Certification Body prior at the first annual audit.</p> <p>At the second annual audit, the clients will provide documented evidence to the Certification Body that they have identified a preferred option and have begun to implement this option in the fishery.</p> <p>At the third annual audit, the clients will provide data on ETP interactions collected under this preferred option to the Certification Body.</p> <p>Prior to the fourth annual audit, the clients will provide results of analysis of this data to the Certification Body.</p>
Consultation on Condition	Federal managers have agreed to work with the clients when necessary to implement this action plan.

13.7.8 Condition 10: Federal Trawl Fishery

Condition 10: Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends	
PI 2.3.3	Information / monitoring. Relevant information is collected to support the management of fishery impacts on ETP species, including: information for the development of the management strategy; information to assess the effectiveness of the management strategy; and information to determine the outcome status of ETP species.

Rationale	<p>SG80 of PI 2.3.3 has two issues: Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts; and sufficient data are available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species.</p> <p>The auditors found that while information available gives estimates of incidental take of ETP species, sufficient data are not available to allow fishery related mortality and the impact of fishing to be quantitatively estimated. The overall score for PI 2.3.3 is thus 65.</p>
Condition	Sufficient data are available to allow fishery related mortality and other impacts of the federal trawl Spiny Dogfish fishery on relevant ETP species to be quantitatively estimated.
Milestones	<ol style="list-style-type: none"> 1. By the first annual audit, there will be documented evidence that options have been considered for improving data on the interactions of the Federal Trawl Fishery for Spiny Dogfish with relevant ETP Species. 2. By the second annual audit there will be documented evidence that the preferred option for improving data on the interactions of the Federal Trawl Fishery for Spiny Dogfish with relevant ETP Species is in the process of implementation. 3. By the third annual audit there will be documented evidence that data on the interactions of the Federal Trawl Fishery for Spiny Dogfish with relevant ETP Species is being collected on a continuous basis. 4. By the fourth annual audit there will be an analysis of the data on the interactions of the Federal Trawl Fishery for Spiny Dogfish with relevant ETP Species.
Client Action Plan	<p>Prior to the first annual audit, the clients will meet with federal managers and discuss options, such as but not limited to, increased observer coverage, the use of video monitoring, and improved data recording and report options (i.e. linking takes of listed species to the Spiny Dogfish FMP proportionally based on fish catch composition), which could be used to improve data on ETP interactions by the Federal Trawl Fishery for Spiny Dogfish. Notes and/or other documented evidence from these meetings will be provided to the Certification Body at the first annual audit.</p> <p>At the second annual audit, the clients will provide documented evidence to the Certification Body that they have identified a preferred option and have begun to implement this option in the fishery.</p> <p>At the third annual audit, the clients will provide data on ETP interactions collected under this preferred option to the Certification Body.</p> <p>At the fourth annual audit, the clients will provide results of analysis of this data to the Certification Body.</p>
Consultation on Condition	Federal managers have agreed to work with the clients when necessary to implement this action plan.

13.7.9 Condition 11: Federal Long Line Fishery

Condition 11: Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends	
PI 2.3.3	Information / monitoring. Relevant information is collected to support the management of fishery impacts on ETP species, including:

	information for the development of the management strategy; information to assess the effectiveness of the management strategy; and information to determine the outcome status of ETP species.
Rationale	<p>SG80 of PI 2.3.3 has two issues: Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts; and sufficient data are available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species.</p> <p>The auditors found that while information available gives estimates of incidental take of ETP species, sufficient data are not available to allow fishery related mortality and the impact of fishing to be quantitatively estimated. The overall score for PI 2.3.3 is thus 65.</p>
Condition	Sufficient data are available to allow fishery related mortality and other impacts of the federal long line Spiny Dogfish fishery on relevant ETP species to be quantitatively estimated.
Milestones	<ol style="list-style-type: none"> 1. By the first annual audit, there will be documented evidence that options have been considered for improving data on the interactions of the Federal Long Line Fishery for Spiny Dogfish with relevant ETP Species. 2. By the second annual audit there will be documented evidence that the preferred option for improving data on the interactions of the Federal Long Line Fishery for Spiny Dogfish with relevant ETP Species is in the process of implementation. 3. By the third annual audit there will be documented evidence that data on the interactions of the Federal Long Line Fishery for Spiny Dogfish with relevant ETP Species is being collected on a continuous basis. 4. By the fourth annual audit there will be an analysis of the data on the interactions of the Federal Long Line Fishery for Spiny Dogfish with relevant ETP Species.
Client Action Plan	<p>Prior to the first annual audit, the clients will meet with federal managers and discuss options, such as but not limited to, increased observer coverage, the use of video monitoring, and improved data recording and report options (i.e. linking takes of listed species to the Spiny Dogfish FMP proportionally based on fish catch composition), which could be used to improve data on ETP interactions by the Federal Long Line Fishery for Spiny Dogfish.</p> <p>Notes and/or other documented evidence from these meetings will be provided to the Certification Body at the first annual audit.</p> <p>At the second annual audit, the clients will provide documented evidence to the Certification Body that they have identified a preferred option and have begun to implement this option in the fishery.</p> <p>At the third annual audit, the clients will provide data on ETP interactions collected under this preferred option to the Certification Body.</p> <p>At the fourth annual audit, the clients will provide results of analysis of this data to the Certification Body.</p>
Consultation on Condition	Federal managers have agreed to work with the clients when necessary to implement this action plan.

13.7.10 Condition 12: State Gill Net fishery

Condition 12: Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends	
PI 2.3.3	Information / monitoring. Relevant information is collected to support the management of fishery impacts on ETP species, including: information for the development of the management strategy; information to assess the effectiveness of the management strategy; and information to determine the outcome status of ETP species.
Rationale	<p>SG80 of PI 2.3.3 has two issues: Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts; and sufficient data are available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species.</p> <p>The auditors found that while information available gives estimates of incidental take of ETP species, sufficient data are not available to allow fishery related mortality and the impact of fishing to be quantitatively estimated. The overall score for PI 2.3.3 is thus 65.</p>
Condition	Sufficient data are available to allow fishery related mortality and other impacts of the state gill net Spiny Dogfish fishery on relevant ETP species to be quantitatively estimated.
Milestones	<ol style="list-style-type: none"> 1. By the first annual audit, there will be documented evidence that options have been considered for improving data on the interactions of the State Gill Net Fishery for Spiny Dogfish with relevant ETP Species. 2. By the second annual audit there will be documented evidence that the preferred option for improving data on the interactions of the State Gill Net Fishery for Spiny Dogfish with relevant ETP Species is in the process of implementation. 3. By the third annual audit there will be documented evidence that data on the interactions of the State Gill Net for Spiny Dogfish with relevant ETP Species is being collected on a continuous basis. 4. By the fourth annual audit there will be an analysis of the data on the interactions of the State Gill Net Fishery for Spiny Dogfish with relevant ETP Species.
Client Action Plan	<p>Prior to the first annual audit, the clients will meet with State managers and discuss options, such as but not limited to, increased observer coverage, the use of video monitoring, and improved data recording and report options (i.e. linking takes of listed species to the Spiny Dogfish FMP proportionally based on fish catch composition), which could be used to improve data on ETP interactions by the State Gill Net Fishery for Spiny Dogfish.</p> <p>Notes and/or other documented evidence from these meetings will be provided to the Certification Body at the first annual audit.</p> <p>At the second annual audit, the clients will provide documented evidence to the Certification Body that they have identified a preferred option and have begun to implement this option in the fishery.</p> <p>At the third annual audit, the clients will provide data on ETP interactions collected under this preferred option to the Certification Body.</p>

	At the fourth annual audit, the clients will provide results of analysis of this data to the Certification Body.
Consultation on Condition	State managers have agreed to work with the clients when necessary to implement this action plan.

13.7.11 Condition 13: State Trawl Fishery

Condition 13: Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends	
PI 2.3.3	Information / monitoring. Relevant information is collected to support the management of fishery impacts on ETP species, including: information for the development of the management strategy; information to assess the effectiveness of the management strategy; and information to determine the outcome status of ETP species.
Rationale	<p>SG80 of PI 2.3.3 has two issues: Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts; and sufficient data are available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species.</p> <p>The auditors found that while information available gives estimates of incidental take of ETP species, sufficient data are not available to allow fishery related mortality and the impact of fishing to be quantitatively estimated. The overall score for PI 2.3.3 is thus 65.</p>
Condition	Sufficient data are available to allow fishery related mortality and other impacts of the State Trawl Spiny Dogfish fishery on relevant ETP species to be quantitatively estimated.
Milestones	<ol style="list-style-type: none"> 1. By the first annual audit, there will be documented evidence that options have been considered for improving data on the interactions of the State Trawl Fishery for Spiny Dogfish with relevant ETP Species. 2. By the second annual audit there will be documented evidence that the preferred option for improving data on the interactions of the State Trawl Fishery for Spiny Dogfish with relevant ETP Species is in the process of implementation. 3. By the third annual audit there will be documented evidence that data on the interactions of the State Trawl Fishery for Spiny Dogfish with relevant ETP Species is being collected on a continuous basis. 4. By the fourth annual audit there will be an analysis of the data on the interactions of the State Trawl Fishery for Spiny Dogfish with relevant ETP Species.
Client Action Plan	<p>Prior to the first annual audit, the clients will meet with State managers and discuss options, such as but not limited to, increased observer coverage, the use of video monitoring, and improved data recording and report options (i.e. linking takes of listed species to the Spiny Dogfish FMP proportionally based on fish catch composition), which could be used to improve data on ETP interactions by the State Trawl Fishery for Spiny Dogfish.</p> <p>Notes and/or other documented evidence from these meetings will be provided to the Certification Body at the first annual audit.</p> <p>At the second annual audit, the clients will provide documented evidence to the Certification Body that they have identified a preferred option</p>

	<p>and have begun to implement this option in the fishery.</p> <p>At the third annual audit, the clients will provide data on ETP interactions collected under this preferred option to the Certification Body.</p> <p>At the fourth annual audit, the clients will provide results of analysis of this data to the Certification Body.</p>
Consultation on Condition	State managers have agreed to work with the clients when necessary to implement this action plan.

13.7.12 Condition 14: State Long Line Fishery

Condition 14: Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends	
PI 2.3.3	Information / monitoring. Relevant information is collected to support the management of fishery impacts on ETP species, including: information for the development of the management strategy; information to assess the effectiveness of the management strategy; and information to determine the outcome status of ETP species.
Rationale	<p>SG80 of PI 2.3.3 has two issues: Information is sufficient to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a full strategy to manage impacts; and sufficient data are available to allow fishery related mortality and the impact of fishing to be quantitatively estimated for ETP species.</p> <p>The auditors found that while information available gives estimates of incidental take of ETP species, sufficient data are not available to allow fishery related mortality and the impact of fishing to be quantitatively estimated. The overall score for PI 2.3.3 is thus 65.</p>
Condition	Sufficient data are available to allow fishery related mortality and other impacts of the State long line Spiny Dogfish fishery on relevant ETP species to be quantitatively estimated.
Milestones	<ol style="list-style-type: none"> 1. By the first annual audit, there will be documented evidence that options have been considered for improving data on the interactions of the State Long Line Fishery for Spiny Dogfish with relevant ETP Species. 2. By the second annual audit there will be documented evidence that the preferred option for improving data on the interactions of the State Long Line Fishery for Spiny Dogfish with relevant ETP Species is in the process of implementation. 3. By the third annual audit there will be documented evidence that data on the interactions of the State Long Line Fishery for Spiny Dogfish with relevant ETP Species is being collected on a continuous basis. 4. By the fourth annual audit there will be an analysis of the data on the interactions of the State Long Line Fishery for Spiny Dogfish with relevant ETP Species.
Client Action Plan	Prior to the first annual audit, the clients will meet with State managers and discuss options, such as but not limited to, increased observer coverage, the use of video monitoring, and improved data recording and report options (i.e. linking takes of listed species to the Spiny Dogfish FMP proportionally based on fish catch composition), which could be used to improve data on ETP interactions by the State Long Line Fishery for Spiny Dogfish.

	<p>Notes and/or other documented evidence from these meetings will be provided to the Certification Body at the first annual audit.</p> <p>At the second annual audit, the clients will provide documented evidence to the Certification Body that they have identified a preferred option and have begun to implement this option in the fishery.</p> <p>At the third annual audit, the clients will provide data on ETP interactions collected under this preferred option to the Certification Body.</p> <p>At the fourth annual audit, the clients will provide results of analysis of this data to the Certification Body.</p>
Consultation on Condition	State managers have agreed to work with the clients when necessary to implement this action plan

13.7.13 Conditions 15 Federal Fishery – All gears

Condition 15: The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable	
PI 3.2.3	Compliance and enforcement: Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with.
Rationale	<p>SG80 of PI 3.2.3 has four issues: A monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules; Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence; Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery; and There is no evidence of systematic non-compliance.</p> <p>The auditors found that there is a suggestion that gill net fishermen do not comply with the regulations governing the use of pingers. This UoC does not meet the third issue of SG80.</p> <p>The auditors found that there is evidence of systematic non-compliance in the ground fish fishery, and it cannot be assumed that the SD fishery is not part of the issue. None of the three UoC meet the fourth issue of SG80.</p> <p>The overall score for PI 3.2.3 for Federal trawl and long line UoCs is 75 and for Gillnet it is 60.</p>
Condition	There is evidence to show that fishermen engaged in the Federal Spiny Dogfish fishery comply with the regulations.
Milestones	<ol style="list-style-type: none"> 1. By the first annual audit there will be plans for analysis on compliance in the Federal Spiny Dogfish fishery. 2. By the second annual audit there will be a report on compliance in the Federal Spiny Dogfish fishery. 3. By the second annual audit there will be evidence that gill net fishermen are complying with the regulations governing the use of pingers in Federal waters. If it is the case that the fishermen are not complying, measures will have been put in place to reduce the amount of non-compliance. 4. By the third annual audit, where and if other areas of systematic non-compliance have been identified measures will have been put in place to reduce the amount of non-compliance.

	5. By the fourth annual audit, where and if areas of systemic non-compliance have been identified there will be documented evidence that this has been reduced as a result of the measures introduced.
Client Action Plan	<p>At the first annual audit, the clients will provide the audit team with documented evidence that fishery's management measures are being enforced in the Federal Spiny Dogfish fishery.</p> <p>Based on prior options, this would consist of gathering observer data, vessel trip reports, and on board monitoring, control and surveillance system information. This will require regulatory measures put forth by federal agencies.</p> <p>At the second annual audit, the clients will provide the audit team with evidence in the form of a report that regulatory compliance is occurring within the Spiny Dogfish fishery (based off data generated from the possible options listed above in previous conditions).</p> <p>At the second annual audit the clients will provide evidence that gill net fishermen are respecting the regulations governing the use of pingers in Federal waters and if it is shown otherwise measures have been implemented to improve conformity.</p> <p>At the third annual audit, the clients will provide the audit team with evidence that if areas of systematic non-compliance in Federal waters have been identified, regulatory measures, based on recommendations from federal managers, will have been instituted in order to reduce the amount of non-compliance. Such measures may include increased onsite enforcement followed by regulatory fines.</p> <p>At the fourth annual audit the clients will provide the audit team with documented evidence regulatory measures have reduced systematic non-compliance within the Federal Spiny Dogfish Fishery.</p>
Consultation on Condition	Federal managers have agreed to work with the clients in order to facilitate the implementation of this action plan.

13.7.14 Conditions 16 State Fishery – All gears

Condition 16: The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable	
PI 3.2.3	Compliance and enforcement: Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with.
Rationale	<p>SG80 of PI 3.2.3 has four issues: A monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules; Sanctions to deal with non-compliance exist, are consistently applied and thought to provide effective deterrence; Some evidence exists to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery; and There is no evidence of systematic non-compliance. The auditors found that:</p> <ul style="list-style-type: none"> Due to the lack of observer coverage, while mechanisms exist for MCS this is not sufficiently developed to be considered a system; none of the fisheries meet the first issue of SG80;

	<ul style="list-style-type: none"> There is a suggestion that gill net fishermen do not comply with the regulations governing the use of pingers in State waters. The gill net UoC does not meet the third issue of SG80. The auditors found that there is evidence of systematic non-compliance in the ground fish fishery, and it cannot be assumed that the SD fishery is not part of the issue. None of the three UoC meet the fourth issue of SG80. <p>The overall score for PI 3.2.3 for State trawl and long line UoCs is 70 and for Gillnet it is 65.</p>
Condition	There is evidence to show that fishermen engaged in the State Spiny Dogfish fishery comply with the regulations.
Milestones	<ol style="list-style-type: none"> By the first annual audit there will be plans for analysis on compliance in the State Spiny Dogfish fishery and how MCS in State waters may be improved. By the second annual audit there will be a report on compliance in the State Spiny Dogfish fishery and proposals to improve MCS. By the second annual audit there will be evidence that gill net fishermen are complying with the regulations governing the use of pingers in State waters. If it is the case that the fishermen are not complying, measures will have been put in place to reduce the amount of non-compliance. By the third annual audit, where and if other areas of systematic non-compliance have been identified measures will have been put in place to reduce the amount of non-compliance. By the third annual audit, measures will have been taken to improve MCS. By the fourth annual audit, where and if areas of systemic non-compliance have been identified there will be documented evidence that this has been reduced as a result of the measures introduced.
Client Action Plan	<p>At the first annual audit, the clients will provide the audit team with documented evidence that fishery's management measures are being enforced in the State Spiny Dogfish fishery and that there has been consideration of the options to strengthen MCS in State waters.</p> <p>Based on prior options, this would consist of observer coverage, vessel trip reports, and on board monitoring, control and surveillance system information. This will require regulatory measures put forth by State agencies.</p> <p>At the second annual audit, the clients will provide the audit team with evidence in the form of a report that regulatory compliance is occurring within the State Spiny Dogfish fishery (based off data generated from the possible options listed above in previous conditions).</p> <p>At the second annual audit the clients will provide evidence that gill net fishermen are respecting the regulations governing the use of pingers in State waters and if it is shown otherwise measures have been implemented to improve conformity.</p> <p>At the third annual audit, the clients will provide the audit team with evidence that if areas of systematic non-compliance have been identified, regulatory measures, based on recommendations from State managers, will have been instituted in order to reduce the amount of non-compliance. Such measures may include increased on-site enforcement followed by regulatory fines.</p> <p>At the fourth annual audit the clients will provide the audit team with documented evidence regulatory measures have reduced systematic non-compliance within the State Spiny Dogfish Fishery.</p>

Consultation on Condition	State managers have agreed to work with the clients in order to facilitate the implementation of this action plan.
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Appendix 1: Scoring Table

P.1	A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.			
1.1	Management Outcomes			
1.1.1	Stock Status	60	80	100
	The stock is at a level which maintains high productivity and has a low probability of recruitment overfishing	It is <u>likely</u> that the stock is above the point where recruitment would be impaired.	It is <u>highly likely</u> that the stock is above the point where recruitment would be impaired. The stock is at or fluctuating around its target reference point.	There is a <u>high degree of certainty</u> that the stock is above the point where recruitment would be impaired. There is a <u>high degree of certainty</u> that the stock has been fluctuating around its target reference point, or has been above its target reference point, <u>over recent years</u> .
Scoring Comments				
<p>SD quotas are set based on female SSB, the necessary spawning component for rebuilding and sustaining the population. The 2010 assessment indicates that female SSB has been above BTHRESHHOLD since 1996, near BTARGET in 2007 and above BTARGET in 2008 and 2009. Therefore, in 2008 the stock was declared as rebuilt and not overfished. Stochastic model estimates of female spawning stock biomass suggest a greater than 50% chance of exceeding the biomass target at the present level of exploitation</p> <p>Annual estimates of biomass of SD (1-2 years old) indicated highly variable recruitment between 1968 and 1996. From 1997 to 2003, pup production was a record low, but has subsequently improved and recent recruitment has been moderate. Recruitment per spawner was highly variable between years. Recruitment in 2009 was the fifth highest in the 42-year NEFSC spring survey time series although the medium term average (2004 - 10) was below the long term mean.</p> <p>Under the rebuilt status, managers now set quotas based on a fishing mortality target level to sustain the healthy population. Since 2001, fishing mortality has been low, with the exception of 2004, ranging between 0.11 and 0.13 during 2005-2008. Short term forecasts of SD biomass are strongly influenced by the size structure of the current population. Under the status quo F ($F=0.11$), the biomass of mature females was expected to have continued to increase through 2011 as fish < 80 cm grew and matured. The target and threshold fishing mortality rates are 0.207 and 0.325, respectively. Therefore F is well below the threshold reference point and the stock is not experiencing overfishing. Stochastic model estimates of fishing mortality rates suggest that the probability of exceeding either the target or threshold F is near zero.</p> <p>Long term projections suggest that SSB will now decline until 2017 as the low number of 1997 - 2003 recruits mature. If recruitment then returns to levels consistent with the expected size-specific reproduction, the mature female biomass will increase again. These oscillations are expected to occur irrespective of the intensity of fishing.</p>				

	Score by UoC													
	FedGN	80	FedLL	80	FedTR	80	AFGN	80	AFLl	80	AFTR	80		
Rational														
Impairment of Recruitment. Female SSB (the component of the population required to sustain the population) has been above BTHRESHHOLD since 2006, near BTARGET in 2007 and above BTARGET in 2008 and 2009. An SSB exceeding BTHRESHHOLD is highly likely to ensure that recruitment and the SSB exceed BTARGET leading to a high degree of certainty that the stock is above the point where recruitment would be impaired. Stochastic model estimates of female spawning stock biomass suggest a greater than 50% chance of exceeding the biomass target. However uncertainty due to the forecast dip in biomass means that while it is highly likely that the stock is above the point where recruitment would be impaired, this cannot be stated with a high degree of certainty. This issue scores 80.														
Attainment of the Target Reference Point. At the current level of exploitation, projections suggest that the population will decline during the mid-2010s as the low annual recruitments from 1997 to 2003 enter into the spawning stock, but the population biomass will remain above BTHRESHOLD returning to BTARGET over time. Because SSB has been above BTARGET for only two years and is predicted to fall below that level for a period of time, but not below BLIM, this issue scores 80.														
The overall score is 80 for all UoC.														
Audit Trace References														
Rago P.J. & K.A. Sosebee 2010; TRAC 2010; http://www2.mar.dfo-mpo.gc.ca/science/trac/TSRs/TSR_2010_01_E.pdf ; TRAC 2010; SAW 2006.														

1.1.2	Reference Points	60	80	100
	Limit and target reference points are appropriate for the stock.	<p><u>Generic</u> limit and target reference points are based on justifiable and reasonable practice appropriate for the species category.</p>	<p>Reference points are appropriate for the stock and can be estimated.</p> <p>The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity.</p> <p>The target reference point is such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome.</p> <p>For low trophic level species, the target reference point takes into account the ecological role of the stock.</p>	<p>Reference points are appropriate for the stock and can be estimated.</p> <p>The limit reference point is set above the level at which there is an appreciable risk of impairing reproductive capacity following consideration of relevant <u>precautionary issues</u>.</p> <p>The target reference point is such that the stock is maintained at a level consistent with B_{MSY} or some measure or surrogate with similar intent or outcome, <u>or a higher level</u>, and takes into account relevant precautionary issues such as the ecological role of the stock with a high degree of certainty.</p>
<p>Scoring Comments</p> <p>The U.S. bases its fishery management objectives and the assessment of SD on biomass and mortality levels in relation to BRPs (both limit and target) consistent with MSY. This approach is consistent with the MSC standard and strives to set BRPs to ensure sustainability.</p> <p>The reference points established in the initial (1999) FMP included a BTARGET of 180,000 mt and a BTHRESHOLD of 100,000 mt, (both expressed in terms of adult (≥ 80 cm) female biomass), and an FTHRESHOLD of $F=0.11$ and an FTARGET of $F=0.08$. The threshold and target fishing mortality rates represent the full F corresponding to a</p>				

knife edge fishery selectivity pattern with a minimum size of 70 cm. At SARC 43 in 2006, biomass reference points were re-estimated using the Ricker model using updated survey data. These results gave an unrealistically high estimate of SSBMAX which was rejected. Ricker model results suggest that the recent stanza of lower than expected recruitment could be associated with changes in maternal size (fewer large females), and possibly also with the ratio of mature males to females.

The BRPs were updated in 2010. Biomass reference points continue to be based on a Ricker stock-recruitment model but in the new formulation they also incorporate information on the average size of the recruits as an important explanatory variable. A hierarchical AIC-based model building approach was used to identify the best model. The revised target reference point, expressed in terms of average weight per tow of mature (> 80 cm) female SD, was estimated as 30.3 kg/tow. Transformed to swept area biomass, $q=1$, the biomass target (SSBMAX) corresponding to the survey footprint amounted to 159,288 mt. Applying the convention defined in the current control rule in the SD FMP, the threshold biomass (BTHRESHHOLD) was one half of the target SSBMAX or 79,644 mt.

The updated fishing mortality reference point incorporates the most recent information on size composition of discards, landings and surveys. Collectively, these data update the estimated selectivity pattern of the fishery. The updated target and threshold fishing mortality rates are 0.207 and 0.325, respectively. Updated estimates of fishing mortality rates in 2008 were 0.110. Stochastic model estimates of fishing mortality rates suggest that the probability of exceeding either the target or threshold F is near zero.

Score by UoC												
FedGN	80	FedLL	80	FedTR	80	AFGN	80	AFL	80	AFTR	80	

Rational

Appropriateness of Reference Points used. Threshold and target fishing mortality rates represent the full F corresponding to a knife edge fishery selectivity pattern with a minimum size of 70 cm. Biomass reference points are based on a Ricker stock-recruitment model and the formulation incorporates information on the average size of the recruits as an important explanatory variable. Therefore, reference points are appropriate for the stock and are estimated. This issue scores 80.

Impairing Reproductive Capacity. BRPs based on a Ricker stock-recruitment model, consistent with MSY, are designed to be above a level where there is appreciable risk of impairing reproductive capacity. However, there are some uncertainties relating to the SSB trajectory in the near future (downturn predicted but not below BLIM) and the assessment model is still under development. Therefore the issue is scored 80.

Consistency with BMSY. USA fishery management objectives including assessment of SD are consistent with MSY. However, it is unclear whether the TRP fully takes into account relevant precautionary issues such as the ecological role of the stock. Therefore this level scores 80.

Trophic level. This is not a low trophic level species; therefore this issue was not scored.

The overall score for PI 1.1.2 is thus 80 for all UoC.

Audit Trace References

Kilduff, P., J. Carmichael and R. Latour, Ed., Tina L. Berger 2009; Rago P.J. & K.A. Sosebee 2010; TRAC 2010; http://www2.mar.dfo-mpo.gc.ca/science/trac/TSRs/TSR_2010_01_E.pdf; TRAC 2010; SAW 2006.

1.1.3	Stock Rebuilding Where the stock is depleted, there is evidence of stock rebuilding.	60 Where stocks are depleted rebuilding strategies which have a <u>reasonable expectation</u> of success are in place. Monitoring is in place to determine whether they are effective in rebuilding the stock within a <u>specified</u> timeframe.	80 Where stocks are depleted rebuilding strategies are in place. There is <u>evidence</u> that they are rebuilding stocks, or it is highly likely based on simulation modeling or previous performance that they will be able to rebuild the stock within a <u>specified</u> timeframe.	100 Where stocks are depleted, strategies are <u>demonstrated</u> to be rebuilding stocks continuously and there is strong evidence that rebuilding will be complete within the <u>shortest practicable</u> timeframe.									
Scoring Comments													
To comply with provisions of the then MSA, SD was declared overfished in 1998 and this invoked the requirement to rebuild the stock. Until rebuilding took place, exploitation was kept below a level of fishing mortality, FREBUILD to allow SSB to reach or exceed BMSY proxy within a 10-year rebuilding horizon. SSBMAX, the (female) spawning stock biomass that is thought to result in the maximum projected recruitment was used as the proxy for BMSY for SD during the rebuilding period from 1999 to 2008.													
Since 1999, the stock size has climbed steadily owing to growth of immature female SD into the 80 cm+ size range, and the survival and growth of the extant mature individuals. Comparison of the biomass reference points with recent spawning stock biomass estimates (194,616 mt. in 2008 and 163,256 mt in 2009) indicates that SD biomass exceeded the target biomass. There was about an 80% chance that the female spawning stock biomass exceeded the target of 159,288 mt in 2008. Therefore, the stock was declared as rebuilt and not overfished. Stochastic model estimates of female spawning stock biomass suggest a greater than 50% chance of exceeding the biomass target.													
	Score by UoC												
	FedGN	NA	FedLL	NA	FedTR	NA	AFGN	NA	AFL	NA	AFTR	NA	
Rational													
This PI was not scored because the stock has been rebuilt to a level exceeding the BTARGET.													
Audit Trace References													
Rago P.J. and K.A. Sosebee 2010; TRAC 2010; http://www2.mar.dfo-mpo.gc.ca/science/trac/TSRs/TSR_2010_01_E.pdf ; TRAC 2010; SAW 2006													

1.2	Harvest Strategy (management)			
1.2.1	Harvest Strategy	60	80	100
	There is a robust and precautionary harvest strategy in place	<p>The harvest strategy is <u>expected</u> to achieve stock management objectives reflected in the target and limit reference points.</p> <p>The harvest strategy is <u>likely</u> to work based on prior experience or plausible argument.</p> <p><u>Monitoring</u> is in place that is expected to determine whether the harvest strategy is working.</p>	<p>The harvest strategy is responsive to the state of the stock and the elements of the harvest strategy <u>work together</u> towards achieving management objectives reflected in the target and limit reference points.</p> <p>The harvest strategy may not have been fully tested but monitoring is in place and <u>evidence</u> exists that it is achieving its objectives.</p>	<p>The harvest strategy is responsive to the state of the stock and is <u>designed</u> to achieve stock management objectives reflected in the target and limit reference points.</p> <p>The performance of the harvest strategy has been <u>fully evaluated</u> and evidence exists to show that it is achieving its objectives including being clearly able to maintain stocks at target levels.</p> <p>The harvest strategy is <u>periodically reviewed and improved</u> as necessary.</p>

Scoring Comments

In 1996, ASMFC was mandated to “*implement a process for the peer review of fish population models upon which fishery management decisions are based*” and monitor stock assessments of all managed species on the Peer Review Schedule. This process is known as the Benchmark Assessment Framework. This is the initial step in the derivation of a harvest strategy.

U.S. benchmark stock assessments are invoked by new fishery management actions and refer to an assessment that goes through an extensive external peer review to validate the credibility of the scientific basis for management. The objectives are to improve the quality of stock assessments, ensure that stock assessments managed by ASMFC periodically undergo a formal peer review and improve public understanding of the assessments.

When SD was declared overfished in the U.S. in 1998, this invoked the requirement under the MSA to rebuild the stock and a federal FMP was implemented which elaborated a harvest strategy. During rebuilding, the FMP was based on a constant fishing mortality strategy that allowed for low bycatch landings in the initial stages with increased landings as the female portion of the stock rebuilt. That approach, consistent with scientific advice led to the stock recovering to a level where $SSB > BTARGET$.

The current federal FMP specified a target fishing mortality rate of $F = 0.03$. This F target translated to a quota of 4 million pounds 1999 increasing to 20 million pounds in

2010. The 20 million pound quota was set to achieve F equal to 75% of the target F and is consistent with recommendations of the SD Technical Committee. The Technical Committee recommended reducing the target F by 25% to minimize any future drop in biomass. The annual quota was split on a semi-annual basis of Period I extending from May 1 through October 31, and Period II from November 1 through April 30 to allow all States to take SD before the quota ran out without impairing the stock. A mandatory catch reporting system is in place (vessels and traders). When the quota is reached, the fishery is closed. To control the level of effort, the management program also uses possession limits of 600 pounds (previously lower). The following outlines the harvest strategy as derived from the FMP. The Federal Register / Rules and Regulations lay out the management measures for SD. This advice applies to all waters off the USA which is inclusive of all UoC plus all other States and gears in which SD are captured. Nearly all (98%) of SD landings since 2001 have been made UoC States. The management advice as it applies to all UoC is consistent with the scientific assessment.

The 20 million pound quota was set to achieve an F equal to 75% of the target F and is consistent with recommendations of the SD Technical Committee. The Technical Committee recommended reducing the target F by 25% to minimize any future drop in biomass. The quota is also consistent with the level recommended by the MAFMC for federal waters at its October meeting. The latest stock assessment information indicates that SD is not overfished and overfishing is not occurring. The biomass in 2010 was estimated to be 361.77 million pounds, which is slightly above the target biomass of 351.23 million pounds and is the second year in a row that biomass has exceeded the target. F was estimated at 0.113 in 2009 which is well below the target (0.207) and threshold (0.325) rates and achieved the F rate as designed. While SD has rebuilt, the stock is anticipated to decrease below the target biomass around 2014 because of record low recruitment from 1997 – 2003. The magnitude of this drop increases with fishing mortality and is projected to occur even if fishing mortality is zero. Thus, the fishery is presently being managed consistent with scientific advice and in a sustainable manner.

Score by UoC											
FedGN	95	FedLL	95	FedTR	95	AFGN	95	AFL	95	AFTR	95

Rational

Responsiveness of the Harvest Strategy. The harvest strategy embodied in the SD FMP, based on scientific advice since 1999, is consistent with and responsive to the state of the stock. During rebuilding, the harvest strategy was based on a constant fishing mortality strategy that allowed for low bycatch landings in the initial stages with increased landings as the female portion of the stock rebuilt. That approach, consistent with scientific advice, led to the stock recovering to a level where SSB > BTARGET. Thus, the SD FMP elaborates a harvest strategy responsive to the condition of the stock and is framed with target and limit reference points. Therefore the issue scores 100.

Monitoring of the Harvest Strategy. The condition of the stock and the effects of the fishery are monitored through regular status assessments and the MP and subsequent harvest controls are adjusted accordingly. However, it is not clear if the current harvest strategy can maintain the stock at the target level when the low year classes of (2003-2007) mature. Thus, this issue is scored as 80.

Performance Evaluation of the Harvest Strategy. The harvest strategy as laid out in the SD MP is periodically reviewed and improved as necessary. The MP is amended on a regular basis to account for changes in stock status and the fishery. Thus, this issue is scored as 100.

According for PI1.2.1 the score achieved for all UoC is 95.

Audit Trace References

ASMFC 2006; Mid-Atlantic Fishery Management Council (MAFMC) and New England Fishery Management Council (NEFMC). 1999; ASMFC 2002; ASMFC 2005; ASMFC 2008; ASMFC 2008; ASMFC. 2008; <http://www.asmfc.org/speciesDocuments/SD/minutesandmeetings/technicalcommittee/oct08TCReport.pdf>; ASMFC 2010.

1.2.2	Harvest control rules and tools	60	80	100
	<p>There are well defined and effective harvest control rules in place</p>	<p><u>Generally understood</u> harvest control rules are in place that are consistent with the harvest strategy and which act to reduce the exploitation rate as limit reference points are approached.</p> <p>There is <u>some evidence</u> that tools used to implement harvest control rules are appropriate and effective in controlling exploitation.</p>	<p><u>Well defined</u> harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.</p> <p>The <u>selection</u> of the harvest control rules takes into account the <u>main</u> uncertainties.</p> <p><u>Available evidence indicates</u> that the tools in use are appropriate and effective in achieving the exploitation levels required under the harvest control rules</p>	<p><u>Well defined</u> harvest control rules are in place that are consistent with the harvest strategy and ensure that the exploitation rate is reduced as limit reference points are approached.</p> <p>The <u>design</u> of the harvest control rules take into account a <u>wide</u> range of uncertainties.</p> <p><u>Evidence clearly shows</u> that the tools in use are effective in achieving the exploitation levels required under the harvest control rules.</p>

Scoring Comments

The original (1999) Interstate FMP for SD stated: “*The federal FMP is based on a constant fishing mortality strategy that allows for low bycatch landings in the initial stages with increased landings as the female portion of the stock rebuilds (MAFMC and NEFMC, 1999). The new federal FMP specified a coast wide target fishing mortality rate of $F = 0.03$. This F target resulted in an initial quota of 4 million pounds. The annual quota was split on a semi-annual basis of Period I extending from May 1 through October 31, and Period II from November 1 through April 30. The semi-annual quota periods were designed to provide each state with an opportunity to land some quantity of SD. To control the level of effort, the management program also uses possession limits of 600 and 300 pounds for Period I and II, respectively.*” Since that time, the quota and the trip limits have been raised on several occasions as the spawning stock biomass (and the stock as a whole) has increased.

The following section outlines the harvest strategy that is derived from the FMP. For the 2010 fishing year, the Federal Register / Vol. 75, No. 121 / Thursday, June 24, 2010 / Rules and Regulations stated: “*NMFS announces specifications and management measures for the SD fishery for the 2010 fishing year (FY) (May 1, 2010, through April 30, 2011). NMFS is implementing a SD quota of 15 million lb. (6,803.89 t) for FY 2010, and maintaining the possession limit of 3,000 lb. (1.36 mt). These measures are consistent with the SD Fishery Management Plan (FMP) and based on new biological reference points announced by peer reviewers of the Transboundary Resource Assessment Committee (TRAC), which indicated the stock is rebuilt*”. DATES: Effective July 26, 2010 through April 30, 2011.

Further, the Nov. 2010 News Release of the ASMFC indicated that for the 2011/2012 fishing year: “*The Commission’s SD and Coastal Sharks Management Board (Board) approved a 20 million pound quota with a maximum possession limit of 3,000 pounds for the 2011/2012 fishing season (May 1 – April 30). As specified under Addendum II,*

the quota will be allocated with 58% to States from Maine through Connecticut, 26% to New York through Virginia, and 16% to North Carolina”.

In 2011, a more explicit HCR was put in place by ASMFC based on advice from SSC stating: “The SSC recommends a 1-year specification of ABC. The SSC applied the Council's risk policy for a typical life history¹, an estimated B2012/Bmsy ratio > 1, and a CV of the OFL distribution of 100%. Using these parameters, the Council's risk policy implies a $P^* = 0.40$. Applying this P^* to the OFL produces an ABC = 20,352 mt (44.9 million pounds). The SSC notes that the stock biomass is projected to decline in the future because of poor recruitment in earlier years. This trend will mean that the ratio of Bcurrent/Bmsy will become <1. As a result, the P^* value developed by the Council's risk policy will be lower, thereby leading to a reduced ABC in future years.”

The key is the recommendation to adjust downward the ABC in future years to account for the effect of low past recruitment thereby being flexible and accounting for uncertainty.

Score by UoC											
FedGN	80	FedLL	80	FedTR	80	AFGN	80	AFLI	80	AFTR	80

Rational

Harvest Control Rules consistent with the Harvest Strategy. The key harvest control rule is the requirement to keep the SD SSB above BLIM and near BTARGET and F below FTARGET as mandated by the MSRA. A rebuilding strategy is required if the stock falls below BLIM Therefore this issue scores 80.

Design and selection of Harvest Control Rules. Managers are required to maintain exploitation below FREBUILD that would lead to SSB reaching or exceeding the BMSY proxy within a 10-year rebuilding horizon. This was achieved. The harvest control rule following rebuilding is to keep the stock above BLIM and near BTARGET However, it is not clear if there is a mechanism in place to reduce exploitation if the limit reference point is approached in future. Therefore the issue is scored as 80.

Effectiveness of tools used to implement Harvest Control Rules. Available evidence indicates that the tools in use, namely the application of a quota consistent with maintenance of an SSB that is maintained at or near BTARGET, weekly monitoring and trip limits to avoid substantial overruns are effective in not exceeding F that would reduce SSB. Therefore the issue is scored as 80.

The overall score achieved for all UoC for PI 1.2.2 is 80.

Audit Trace References

ASMFC 2006; MAFMC & NEFMC 1999; ASMFC 2002; ASMFC 200; ASMFC 2008; ASMFC 2008; ASMFC 2008; <http://www.asmfc.org/speciesDocuments/SD/minutesandmeetings/technicalcommittee/oct08TCReport.pdf>; ASMFC 2010; Federal Register / Vol. 75, No. 121 / Thursday, June 24, 2010 / Rules and Regulations Nov. 2010; Federal Register / Vol. 75, No. 121 / Thursday, June 24, 2010 / Rules and Regulations

1.2.3	Information / monitoring	60	80	100
	Relevant information is collected to support the harvest strategy	<p><u>Some</u> relevant information related to stock structure, stock productivity and fleet composition is available to support the harvest strategy.</p> <p>Stock abundance and fishery removals are monitored and at least one indicator is available and monitored with sufficient frequency to support the harvest control rule.</p>	<p><u>Sufficient</u> relevant information related to stock structure, stock productivity, fleet composition and other data is available to support the harvest strategy.</p> <p>Stock abundance and fishery removals are <u>regularly monitored at a level of accuracy and coverage consistent with the harvest control rule</u>, and one or more indicators are available and monitored with sufficient frequency to support the harvest control rule.</p> <p>There is good information on all other fishery removals from the stock.</p>	<p>A <u>comprehensive range</u> of information (on stock structure, stock productivity, fleet composition, stock abundance, fishery removals and other information such as environmental information), including some that may not be directly relevant to the current harvest strategy, is available.</p> <p><u>All information</u> required by the harvest control rule is monitored with high frequency and a high degree of certainty, and there is a good understanding of the inherent <u>uncertainties</u> in the information [data] and the robustness of assessment and management to this uncertainty.</p>

Scoring Comments

TRAC 2010 Proceedings stated that compared to other shark species, assessments of SD are supported by abundant fishery independent and dependent data. Nonetheless, information gaps in landings and surveys are evident, and no routine age data are collected.

Fishery removals, namely landing and discard statistics by gear type and area (State) are used to estimate mortality. Landing statistics from each of the States derived from official landing records reported to NMFS plus gear based estimates of dead discards collectively constitute the estimates of commercial fishery removals used to estimate F. Biological sampling of the landings to obtain data on size of fish caught by sex generally coincide with the seasonal pattern of landings: most samples were taken in June through November with much lower effort from January to May. Observer trips sampled for landed and discarded fish by gear type, month, and region (TRAC Proceedings 2010). Thus, length/sex based removals are available to incorporate into the assessment model.

Estimates of recreational catch of SD, collected consistently since 1979, were obtained from the NMFS Marine Recreational Fishery Statistics Survey. The MFRSS estimates

a) catches representing landed fish enumerated by the interviewer, b) landed catches reported by the angler and c) catches taken and returned to the water.

The data used to estimate biomass and abundance of SD are derived from spring and autumn bottom trawl surveys conducted annually since 1963 by the NEFSC, providing a long time series of fishery independent abundance and biomass data. The surveys extend from the Gulf of Maine to Cape Hatteras on the USA continental shelf covering nearly all of the US range of SD. Details on the stratified random survey design and biological sampling methodology are found in and. Sex of SD was not routinely examined until 1980 but there are some data by sex for 1968-1972. Thus, the analyses are sex disaggregated. Further details of the surveys are available in the TRAC 2010 Proceedings and the 2006 SAW.

Score by UoC											
FedGN	80	FedLL	80	FedTR	80	AFGN	80	AFLI	80	AFTR	80

Rational

Information on the stock and fleet composition. The 2010 TRAC indicated that there is minimal mixing of SD between Canadian and USA waters (10% annually) and therefore it is likely that there are two stocks. Under this circumstance, best available knowledge indicates that assessing US SD as a separate stock is appropriate. Stock productivity is generally known and stock abundance is well understood. As well, information on fleet composition although known overall could be more detailed by UoC. As the fishery is open, fleet composition changes over time. Stock abundance and fishery removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule. Accordingly, available information is considered sufficient but not comprehensive and the fishery meets the first issue of SG80.

Monitoring of fishery removals and stock abundance. TRAC 2010 Proceedings stated that compared to other shark species, assessments of SD are supported by abundant fishery independent and dependent data. The spring trawl survey is thought to accurately reflect changes in abundance. Nonetheless, information gaps in landings and surveys are evident, and no routine age data are collected. Stock abundance and fishery removals are regularly monitored at a level of accuracy and coverage consistent with the harvest control rule. Not all information is available. Therefore the fishery meets the second issue of SG80.

All other fishery removals. The recreational fishery is monitored and catch estimated. The fishery meets the third issue of SG80.

Accordingly, the overall score allocated for PI 1.2.3 is 80.

Audit Trace References

Azarovitz, T.R. 1981; MRFSS - Marine Recreational Fishery Statistics Survey; Grosslein, M.D., 1969a; TRAC 2010; Van Voorhees, D.A., J.A. Witzig, M.F. Osborn, M.C. Holliday & R.J. Essig. 1992

1.2.4	Assessment of stock status	60	80	100
	There is an adequate assessment of the stock status	<p>The assessment estimates stock status relative to reference points.</p> <p>The assessment identifies major sources of uncertainty.</p>	<p>The assessment is appropriate for the stock and for the harvest control rule, and is evaluating stock status relative to reference points.</p> <p>The assessment takes uncertainty into account.</p> <p>The assessment of stock status is subject to peer review.</p>	<p>The assessment is appropriate for the stock and for the harvest control rule and takes into account the major features relevant to the biology of the species and the nature of the fishery.</p> <p>The assessment takes into account uncertainty and is evaluating stock status relative to reference points in a probabilistic way.</p> <p>The assessment has been tested and shown to be robust. Alternative hypotheses and assessment approaches have been rigorously explored.</p> <p>The assessment has been <u>internally and externally</u> peer reviewed.</p>

Scoring Comments

The data used to estimate biomass and abundance of SD are sufficient to determine species status. They are derived from fishery independent surveys encompassing the stock distribution, conducted over a long period since 1963. Estimates of biomass and abundance of females >80 cm (SSB) and fish < 60 cm (recruitment) as well as other population components are derived from the survey. SSB is compared to target and threshold (limit) references points to determine stock status. The fishery is adequately monitored to provide estimates of mortality due to fishing (F), by size and sex. F is also placed into a target and threshold framework to define appropriate levels of removals. Thus, the assessment and harvest control are appropriate for the species.

Since 1985, SARC, NMFS has peer-reviewed fish stock status analyses produced by the SAW. In 2010, the assessment was peer reviewed within the TRAC Framework (formerly done under SAW/SARC) comprising scientists and species experts from the USA and Canada. The assessment results are subsequently (externally) reviewed by the ASMFC. In 1996, ASMFC was mandated to “*implement a process for the peer review of fish population models upon which fishery management decisions are based*” and

monitor stock assessments of all managed species on the Peer Review Schedule. This process is known as the Benchmark Assessment Framework. The SSC provides oversight and review of the stock assessment peer review process for ASMFC.

	Score by UoC											
	FedGN	100	FedLL	100	FedTR	100	AFGN	100	AFL	100	AFTR	100

Rational

Stock status relative to reference points. SSB is compared to target and threshold (limit) references points to determine stock status and as this is appropriate to the stock and for the HCR, the fishery meets the first issue of both SG60 and SG80. SSB monitored over the long term is compared directly to reference points, namely BLIM and BTARGET, in order to reflect the control rule that SSB stays near BTARGET. Given that the assessment considers the concentration of the fishery on females and the influence of fecundity and size, the assessment takes into account the major features relevant to the biology of the species and the nature of the fishery. Therefore, the fishery meets the first issue of SG100.

Sources of uncertainty in assessments. The assessment identifies major sources of uncertainty and takes uncertainty into account by examining variance and expressing probabilities (example - stochastic model estimates of fishing mortality rates suggest that the probability of exceeding either the target or threshold F is near zero) and inclusion of factors affecting the assessment results. The fishery meets the second issue of SG100.

Robustness of the assessment. The SD assessment set is based on female SSB, the necessary spawning component for rebuilding and sustaining the population.. Several assessment approaches have been explored and have undergone internal and external review (TRAC which includes Canadian and US scientists and the SSC). The US assessment has been tested and shown to be robust. Thus, the fishery meets the third issue of SG100.

Peer Review of the assessment. The assessment is peer reviewed by scientists and species experts from the USA and Canada. The assessment results are subsequently (externally) reviewed by external reviewers and by ASMFC. This process is known as the Benchmark Assessment Framework. Thus, the fishery meets the fourth issue of SG100.

The overall score allocated for all UoC is 100.

Audit Trace References

ASMFC. 2008; Benchmark Assessment Framework 2009; TRAC 2010; SAW 2006.

P. 2	Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends			
2.1	Retained non-target species			
2.1.1	Status	60	80	100
	The fishery does not pose a risk of serious or irreversible harm to the retained species and does not hinder recovery of depleted retained species.	<p>Main retained species are <u>likely</u> to be within biologically based limits or if outside the limits there are <u>measures</u> in place that are <u>expected</u> to ensure that the fishery does not hinder recovery and rebuilding of the depleted species.</p> <p>If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the retained species to be outside biologically based limits or hindering recovery.</p>	Main retained species are <u>highly likely</u> to be within biologically based limits, or if outside the limits there is a <u>partial strategy</u> of <u>demonstrably effective</u> management measures in place such that the fishery does not hinder recovery and rebuilding.	<p>There is a <u>high degree of certainty</u> that retained species are within biologically based limits.</p> <p>Target reference points are defined and retained species are at or fluctuating around their target reference points.</p>
Scoring Comments				
<p>Gillnets.</p> <p>There are 7 identified retained species ranging from winter skate (12.4 %) to white hake (0.9%) apart from a number of unidentified other species (34) that together comprise 0.99 % of the catch. The main species (>5% of the total catch) are winter skate (12.4 %), Atlantic cod (12.0 %) and pollock (6.3 %). There are no vulnerable or high value species.</p> <p><u>Winter Skate.</u> While there has been a petition to have this species (along with 3 other skate species) listed under the US ESA, there is currently no prohibition on the landing and discard of winter skates in US waters, the 2009-2011 NEFSC autumn average biomass index of 8.69 kg/tow is above both the biomass threshold reference point (2.83 kg/tow) and the Bmsy proxy (5.66 kg/tow), and thus the species is not overfished and is above Bmsy. The 2009-2011 average index is below the 2008-2010 index by 10%, but overfishing is not occurring as this decline is not more than 20%.</p> <p><u>Atlantic Cod.</u> On GB, resource productivity is currently poor due to low recent recruitment and low weights at age compared to the 1980s. While management measures have resulted in decreased exploitation rate since 1995, fishing mortality has remained above Fref and adult biomass has fluctuated without any appreciable rebuilding. A new stock assessment is due in December 2012. For the GOM stock, the stock is overfished and overfishing continues to occur. There will be a new stock assessment in December</p>				

2012.

Pollock. In May, 2011 the Gulf of Maine Research Institute reported that “*according to the updated biological reference points and analysis utilized in the 2010 50th Northeast Regional Stock Assessment Workshop (50th SAW), Atlantic pollock is not overfished ($SSB > \frac{1}{2} SSBMSY$). In addition, this most recent assessment also determined that overfishing of pollock is not occurring ($F < FMSY$), based on data from the 2009 fishing year*”.

Trawlers

There are 7 identified retained species ranging from Atlantic herring (44.39 %) to Longfin squid (0.92 %) together with unidentified other species (62) that together comprise 6.39 % of the catch. Unknown species comprise 3.1 % of the catch. The main species (> 5% of the total catch) are herring (44.39%) and mackerel (23.40%). There are no vulnerable or high valued species.

Herring. Scientists estimate the Atlantic herring population in the GOM GB herring stock complex is at 97 % of the target population level. 2008 abundance estimates were 651,700 mt, which is slightly below the target level of 670,600 mt. The estimated F in 2008 was 0.14; below FMSY of 0.27.

Mackerel. The mackerel stock was assessed by TRAC in early 2010. Given the uncertainty in the assessment results, TRAC agreed that characterization of stock status relative to model output reference points would not be appropriate. Given current indications of reduced productivity and lack of older fish in the survey and catch, TRAC recommended that annual total catches not exceed the average total landings (80,000 mt) over the last three years (2006-2008) until such time that new information suggests that a different amount is appropriate.

Longlines.

There are 4 identified retained species ranging from haddock (14.4 %) to winter flounder (0.9 %) together with unidentified other species (9) that together comprise 0.9 % of the catch. The only main species (> 5%) is haddock. Atlantic cod is a vulnerable species but the catch is minimal in fisheries where SD is caught and thus not considered. No bait species is considered a main species.

Haddock. Based on the current assessment, the GOM haddock stock is not overfished and overfishing is not occurring. The GB haddock stock is a trans-boundary resource, which is co-managed with Canada. Substantial declines have recently occurred in the weights at age due to slower than average growth, particularly of the 2003 year-class. This is affecting productivity in the short-term. The growth of subsequent year-classes is returning to the earlier rates. The stock is not overfished and overfishing is not occurring.

Score by UoC											
FedGN	70	FedLL	80	FedTR	80	AFGN	65	AFLL	80	AFTR	80

Rational

Federal

Gillnet.

Winter Skate. Both scoring issues of SG60 are met: the stocks are outside biological limits but there are measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding. The SG80 scoring issue is met as the management measures in place have been demonstrably effective in rebuilding the stocks. The two SG100 scoring issues are not met. The score is 80.

Atlantic cod. Both scoring issues of SG60 are met: the stocks are outside biological limits but there are measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding. The SG80 scoring issue is not met as the management measures in place have not been demonstrably effective in rebuilding the stocks. Accordingly, the two SG100 scoring issues are not met. The score is 60.

Pollock. The results of the most recent stock assessment show that this species is within biologically based limits; thus meeting the first issue at SG60. The fishery also meets the single issue at SG80 as it is considered highly likely that the stock is within biologically based limits.

On that basis the overall score is 70. *A condition is raised to the certification (Condition 1).*

Trawlers.

Herring. The resource assessment shows that it is high likely that the herring stock is within biologically based limits. The fishery meets the first issue at SG60 and the single issue at SG80. The score is 80.

Mackerel. While there is some uncertainty as to whether it is highly likely that the mackerel stock is within biologically based limits, there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding. The fishery meets the first issue at SG60 and the single issue at SG80. The score is 80.

The overall score is thus 80.

Longlines.

Haddock. The resource assessments show that it is high likely that the haddock stocks are within biologically based limits. The fishery meets the first issue at SG60 and the single issue at SG80. Due to the retained catch of a limited amount of cod the fishery does not meet the two scoring issues at SG100.

The overall score is thus 80.

ASFMC

Gillnet

See Federal gill net. The overall score is 70. *A condition is raised to the certification (Condition 2).*

Trawlers:

See Federal Trawler. The score is 80.

Longlines:

See Federal Long Line. The score is 80.

Audit Trace References

NMFS 2011; Mayo & O'Brien 2006; TRAC Status Report 2010/03; Mayo *et al.* 2009, Purtle 2011; Gulf of Maine Research Institute, 2011; TRAC 2009; MAMFC 2010; NEFMC 2010d.

2.1.2	Management strategy	60	80	100
	<p>There is a strategy in place for managing retained species that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to retained species.</p>	<p>There are <u>measures</u> in place, if necessary, that are expected to maintain the main retained species at levels which are highly likely to be within biologically based limits, or to ensure the fishery does not hinder their recovery and rebuilding.</p> <p>The measures are considered <u>likely</u> to work, based on plausible argument (e.g., general experience, theory or comparison with similar fisheries/species).</p>	<p>There is a <u>partial strategy</u> in place, if necessary that is expected to maintain the main retained species at levels which are highly likely to be within biologically based limits or to ensure the fishery does not hinder their recovery and rebuilding.</p> <p>There is some <u>objective basis for confidence</u> that the partial strategy will work, based on some information directly about the fishery and/or species involved.</p> <p>There is <u>some evidence</u> that the partial strategy is being <u>implemented successfully</u>.</p>	<p>There is a <u>strategy</u> in place for managing retained species.</p> <p>The strategy is mainly based on information directly about the fishery and/or species involved, and <u>testing</u> supports <u>high confidence</u> that the strategy will work.</p> <p>There is <u>clear evidence</u> that the strategy is being <u>implemented successfully</u>, and intended changes are occurring.</p> <p>There is some evidence that the strategy is <u>achieving its overall objective</u>.</p>

Scoring Comments

Atlantic cod, Haddock & Pollock. The NEMSFMP covers 13 species (a total of 20 stocks) including cod (GOM & GB), haddock (GOM & GB) and pollock. It was implemented in 1986 to reduce the F of heavily fished groundfish stocks and promote their rebuilding to sustainable biomass levels. On 1 May 2010, a new management program, Amendment 16 to the NEMSFMP was implemented to comply with the requirements of the MSRA i.e. ACLs and a LAPP provision. The former must be set at or below the ABC of the fishery as recommended by the SSC, and the ACL cannot exceed the SSC's recommendation for ABC. In addition, AMs detail what actions will be taken in the event of an overage of harvest level. The latter consists of a Federal permit issued as part of a limited access system to harvest a defined share of the ACL.

Winter Skate. Winter skate is managed as part of the NE Skate Complex Management Plan. The Northeast complex includes seven species: winter skate, barndoor skate,

thorny skate, smooth skate, little skate, clear nose skate, and rosette skate. “The primary objectives of the Skate FMP are to: (1) protect the overfished species of skates and increase their biomass to target levels specified in the FMP while preventing overfishing of the other skate species and (2) collect information critical for improving knowledge of skate fisheries by species and for monitoring the status of skate fisheries, resources, and related markets, as well as the effectiveness of skate management approaches. The FMP includes reporting requirements to improve fishery information; prohibitions on overfished species, a trip limit for the skate wing fishery, and mechanisms for FMP monitoring and plan adjustments. Importantly, through the establishment of a “baseline” of management measures in other fisheries, the FMP recognizes the interactions of skates with the groundfish, scallop and monkfish fisheries.”

Herring. This species is managed by NEFMC (Federal waters) and ASFMC (State waters). Management measures include annual catch limits, limited access, trip limits and closed areas.

Mackerel. MAFMC has responsibility for management of this species which is covered in the Atlantic Mackerel, Squid and Butterfish (MSB) FMP. The individual MSB FMPs were adopted by MAMFC in 1978 and were subsequently approved by NMFS in 1979. The MAFMC began work to merge them into a single FMP in 1980 and this was implemented by in 1983. Since then the FMP has been amended 10 times. Various measures have been introduced to ensure that the stock is kept within biologically based limits.

Score by UoC											
FedGN	80	FedLL	85	FedTR	85	AFGN	80	AFL	85	AFTR	85

Rational

Federal Gillnet

Winter skate. The two scoring issues of SG60 are met as evidenced by the measures and regulations in place through the Skate FMP. It is also clear that there a partial strategy in place, as evidenced by a suite of management plans and measures in place to manage retained species catch within identified limits. General experience suggests that the measures implemented will work and the fishery meets the second issue of SG60. Available information on the status of the fishery shows that it not overfished and there is objective basis for confidence that the partial strategy is working, and is being implemented successfully. The score is 80.

Atlantic cod. The two scoring issues of SG60 are met as evidenced by the measures and regulations in place through the Multispecies FMP. It is also clear that there a partial strategy in place, as evidenced by a suite of management plans and measures in place to manage retained species catch within identified limits. The information systems in place indicate that there is some objective basis for confidence that the partial strategy will work. The monitoring systems in place provide some evidence that the management strategy is being implemented successfully. As such, the three scoring issues of SG80 are met.

Pollock. The two scoring issues of SG60 are met as evidenced by the measures and regulations in place through the Multispecies FMP. It is also clear that there a partial strategy in place, as evidenced by a suite of management plans and measures in place to manage retained species catch within identified limits. The information systems in place indicate that there is some objective basis for confidence that the partial strategy will work. The monitoring systems in place provide some evidence that the management strategy is being implemented successfully. As such, the three scoring issues of SG80 are met.

All retained species. The first scoring issue of SG100 is met through the FMPs in place but the other three are not because high confidence and evidence of successful implementation cannot be obtained with the current level of information available. Accordingly the score for this UoC is 85

The score for this UoC is 80.

Trawlers

Herring. The two scoring issues of SG60 are met as evidenced by the measures and regulations in place through the Herring FMPs. It is also clear that there a strategy in place

and measures in place to manage herring within identified limits. The information available indicates that there is some objective basis for confidence that the strategy will work. As such, the three scoring issues of SG80 are met. The score is 80.

Mackerel. The two scoring issues of SG60 are met as evidenced by the measures and regulations in place through the MBS FMP. It is also clear that there a strategy in place and measures in place to manage herring within identified limits. The information available indicates that there is some objective basis for confidence that the strategy will work. As such, the three scoring issues of SG80 are met. The score is 80.

All retained species. The first scoring issue of SG100 is met through the FMPs in place but the other three are not because high confidence and evidence of successful implementation cannot be obtained with the current level of information available. Accordingly the score for this UoC is 85

The score for this UoC is 85.

Longlines

Haddock. The two scoring issues of SG60 are met as evidenced by the measures and regulations in place through the Multispecies FMP. It is also clear that there a partial strategy in place, as evidenced by a suite of management plans and measures in place to manage retained species catch within identified limits. The information systems in place indicate that there is some objective basis for confidence that the partial strategy will work. The monitoring systems in place provide some evidence that the management strategy is being implemented successfully. As such, the three scoring issues of SG80 are met.

All retained species. The first scoring issue of SG100 is met through the FMPs in place but the other three are not because high confidence and evidence of successful implementation cannot be obtained with the current level of information available. Accordingly the score for this UoC is 85

ASFMC

Gillnet: See Federal Gillnet. The score for this UoC is 80.

Trawlers: See Federal trawl. The score for this UoC is 85.

Longlines: See Federal longline. The score for this UoC is 85.

Audit Trace References

MAFMC 1983; NEFMC 2011; www.mafmc.org; <http://www.nefmc.org/skates/index.html>;

2.1.3	Information / monitoring	60	80	100
	<p>Information on the nature and extent of retained species is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage retained species.</p>	<p><u>Qualitative information</u> is available on the amount of main retained species taken by the fishery.</p> <p>Information is <u>adequate</u> to <u>qualitatively</u> assess outcome status with respect to biologically based limits.</p> <p>Information is adequate to support <u>measures</u> to manage <u>main</u> retained species.</p>	<p><u>Qualitative information</u> and some quantitative information are available on the amount of main retained species taken by the fishery.</p> <p>Information is <u>sufficient</u> to estimate outcome status with respect to biologically based limits.</p> <p>Information is adequate to support a <u>partial strategy</u> to manage <u>main</u> retained species.</p> <p>Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).</p>	<p>Accurate and verifiable information is available on the catch of all retained species and the consequences for the status of affected populations.</p> <p>Information is <u>sufficient</u> to <u>quantitatively</u> estimate outcome status with a <u>high degree of certainty</u>.</p> <p>Information is adequate to support a <u>comprehensive strategy</u> to manage retained species, and evaluate with a <u>high degree of certainty</u> whether the strategy is achieving its objective.</p> <p>Monitoring of retained species is conducted in sufficient detail to assess ongoing mortalities to all retained species.</p>

Scoring Comments

Bycatch in Northeast Region fisheries is monitored primarily through NEFOP. In addition, discards are reported on Northeast Region FVTR. As such, FVTR data represent a comprehensive source of information on total fishing effort, location, catch, and bycatch (NAMFC & NEFMC 2007). For practical reasons, the program operates on the basis of fishing modes where a fishing mode is defined according to the fishing gear used and the area from which the vessels depart, rather than by FMPs.

Because trips or sets targeting SD are not declared before they are undertaken, reliance is on a definition of the fishery done *a posteriori* (see Species Composition: Retained Catch and Discards). Also, as it is not always possible to determine the origin of the catches between federal and state waters, the assessment of these components of P2 was only possible at the gear level. *“The amount of bycatch associated with SD harvest in state waters is poorly understood since non-federally permitted vessels are not required*

to participate in the Federal Observer program or submit vessel trip reports” (MAFMC 2010a).

Score by UoC												
FedGN	75	FedLL	75	FedTR	75	AFGN	75	AFL	75	AFTR	75	

Rational

Federal

Gillnet

The three scoring issues of SG60 are met, as evidenced by the wide range of data and reports on bycatch species, their status and their management. The first scoring issue of SG80 is met as qualitative information and some quantitative data are available on the amount of main retained species taken in the fishery. This information is sufficient to estimate outcome status with respect to biologically based limits and is adequate to support a partial strategy to manage the main retained species. The fourth scoring issue of SG80 is not met as it is not possible to determine the origin of the catches between federal and state waters and because there is reliance on a definition of the fishery done *a posteriori*. Because of these data limitation, none of the SG100 scoring issues are met. The overall score is 75. ***A condition is raised to the certification (Condition 3).***

Trawlers

The three scoring issues of SG60 are met, as evidenced by the wide range of data and reports on bycatch species, their status and their management. The first scoring issue of SG80 is met as qualitative information and some quantitative data are available on the amount of main retained species taken in the fishery. This information is sufficient to estimate outcome status with respect to biologically based limits and is adequate to support a partial strategy to manage the main retained species. The fourth scoring issue of SG80 is not met as it is not possible to determine the origin of the catches between federal and state waters and because there is reliance on a definition of the fishery done *a posteriori*. Because of these data limitation, none of the SG100 scoring issues are met. The overall score is 75 ***A condition is raised to the certification (Condition 4).***

Longlines

The three scoring issues of SG60 are met, as evidenced by the wide range of data and reports on bycatch species, their status and their management. The first scoring issue of SG80 is met as qualitative information and some quantitative data are available on the amount of main retained species taken in the fishery. This information is sufficient to estimate outcome status with respect to biologically based limits and is adequate to support a partial strategy to manage the main retained species. The fourth scoring issue of SG80 is not met as it is not possible to determine the origin of the catches between federal and state waters and because there is reliance on a definition of the fishery done *a posteriori*. Because of these data limitation, none of the SG100 scoring issues are met. The overall score is 75. ***A condition is raised to the certification (Condition 5).***

ASFMC

Gillnet

While there are no main retained species in NJ, VA and NC, there are in ME, NH, MA and RH. The score is as for Federal gill net i.e. 75. ***A condition is raised to the certification (Condition 6).***

Trawlers

The score is as Federal i.e. 75. ***A condition is raised to the certification (Condition 7).***

Longlines

The score is as Federal i.e. 75. ***A condition is raised to the certification (Condition 8).***

Audit Trace References
NAMFC and NEFMC 2007; MAFMC 2010a; http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm .

2.2	Discarded species (also known as “bycatch” or “discards”)			
2.2.1	Status	60	80	100
	The fishery does not pose a risk of serious or irreversible harm to the bycatch species or species groups and does not hinder recovery of depleted bycatch species or species groups.	<p>Main bycatch species are <u>likely</u> to be within biologically based limits, or if outside such limits there are mitigation <u>measures</u> in place that are <u>expected</u> to ensure that the fishery does not hinder recovery and rebuilding.</p> <p>If the status is poorly known there are measures or practices in place that are expected to result in the fishery not causing the bycatch species to be outside biologically based limits or hindering recovery.</p>	Main bycatch species are <u>highly likely</u> to be within biologically based limits or if outside such limits there is a <u>partial strategy</u> of <u>demonstrably effective</u> mitigation measures in place such that the fishery does not hinder recovery and rebuilding.	There is a <u>high degree of certainty</u> that bycatch species are within biologically based limits.

Scoring Comments

Gillnets

There are a number of bycatch species ranging from Atlantic cod (1.40 %) to monkfish (0.23 %) apart from a range of other species (56) that together comprise 0.99 % of the total catch in the observed trips where spiny dogfish was caught. There are no main species taken as targeted species / by catch in fisheries where SD is caught in a directed fishery or as a by catch in another fishery. While Atlantic cod (1.4 %), winter skate (0.59 %) and barndoor skate (0.29%) are vulnerable species their low level of discard means that it is not taken into consideration. The same is the case for lobster (0.79%) that may be considered a valuable species.

Longlines

The four identified bycatch species account for only 1.9 % of the total catch in the observed trips where spiny dogfish was caught. 21 other species together comprise 1.3 % of the catch. There are no main species taken as targeted species / by catch in fisheries where SD is caught in a directed fishery or as a by catch in another fishery. While barndoor skate (0.4%) is a vulnerable species its low level of discard means that it is not taken into consideration. The same is the case for lobster (0.4%) that may be considered a valuable species.

Trawlers

There are a number of bycatch species ranging from little skate (2.2 %) to American lobster (0.14 %) apart from a range of other species (73) that together comprise 1.5 % of the catch. There are no main species taken as targeted species / by catch in fisheries where SD is caught in a directed fishery or as a by catch in another fishery. While Atlantic cod (0.27%), winter skate (0.88 %) and barndoor skate (0.23%) are vulnerable species their low level of discard means that it is not taken into consideration. The same is the

case for lobster (0.14%) that may be considered a valuable species.

Score by UoC											
FedGN	80	FedLL	80	FedTR	80	AFGN	80	AFL	80	AFTR	80

Rational

Federal

Gillnet.

As there are no main bycatch species for this UoC, it meets both SG60 issues and the single issue of SG80. As all species includes Atlantic cod, winter skate and barndoor skate the fishery does not meet the single issue at SG100. The score is 80.

Trawlers.

As there are no main bycatch species for this UoC, it meets both SG60 issues and the single issue of SG80. As all species include Atlantic cod, winter skate and barndoor skate the fishery does not meet the single issue at SG100. The score is 80.

Longlines.

As there are no main bycatch species for this UoC, it meets both SG60 issues and the single issue of SG80. As all species include barndoor skate the fishery does not meet the single issue at SG100. The score is 80.

ASFMC

Gillnet. As federal above; the score is 80.

Trawlers. As federal above; the score is 80.

Longlines. As federal above; the score is 80.

Audit Trace References

NMFS 2007; ASMFC 2002; Sosebee 2006; Warden 2010.

2.2.2	Management strategy	60	80	100
	<p>There is a strategy in place for managing bycatch that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to bycatch populations.</p>	<p>There are <u>measures</u> in place, if necessary, which are expected to maintain main bycatch species at levels which are highly likely to be within biologically based limits or to ensure that the fishery does not hinder their recovery.</p> <p>The measures are considered <u>likely</u> to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/species).</p>	<p>There is a <u>partial strategy</u> in place, if necessary, for managing bycatch that is expected to maintain main bycatch species at levels which are highly likely to be within biologically based limits or to ensure that the fishery does not hinder their recovery.</p> <p>There is <u>some objective basis for confidence</u> that the partial strategy will work, based on some information directly about the fishery and/or the species involved.</p> <p>There is <u>some evidence</u> that the partial strategy is being implemented successfully.</p>	<p>There is a <u>strategy</u> in place for managing and minimizing bycatch.</p> <p>The strategy is mainly based on information directly about the fishery and/or species involved, and testing supports <u>high confidence</u> that the strategy will work.</p> <p>There is some <u>evidence</u> that the strategy is achieving its objective.</p> <p>There is <u>clear evidence</u> that the strategy is being implemented successfully, and intended changes are occurring.</p>

Scoring Comments

Skates are managed as part of the Northeast Skate Complex FMP that includes reporting requirements to improve fishery information; prohibitions on overfished species, a trip limit for the skate wing fishery, and mechanisms for FMP monitoring and plan adjustments. Importantly, through the establishment of a “baseline” of management measures in other fisheries, the FMP recognizes the interactions of skates with the groundfish, scallop and monkfish fisheries. The other bycatch species are managed under specific FMPs (groundfish / multispecies, monkfish, herring, skates, bluefish, summer flounder, scup, American lobster, sea scallop) which include a number of management measures.

	Score by UoC													
	FedGN	85	FedLL	85	FedTR	85	AFGN	85	AFL	85	AFTR	85		
Rational														
<u>Federal</u>														
Gillnet.														
As there are no main bycatch species for this UoC, it meets SG80. For all bycatch species, the first scoring issue of SG100 is met through the FMPs in place but the other three are not because high confidence and evidence of successful implementation cannot be concluded from the current level of information available. Accordingly the score for this UoC is 85														
Trawlers.														
As there are no main bycatch species for this UoC, it meets SG80. For all bycatch species, the first scoring issue of SG100 is met through the FMPs in place but the other three are not because high confidence and evidence of successful implementation cannot be obtained with the current level of information available. Accordingly the score for this UoC is 85														
Longlines.														
As there are no main bycatch species for this UoC, it meets SG80. For all bycatch species, the first scoring issue of SG100 is met through the FMPs in place but the other three are not because high confidence and evidence of successful implementation cannot be obtained with the current level of information available. Accordingly the score for this UoC is 85														
<u>ASFMC</u>														
Gillnet. As federal above; score is 85.														
Trawlers. As federal above; score is 85.														
Longlines. As federal above; score is 85.														
Audit Trace References														
Zollett 2009; NMFS 2011b; Northeast Fishery Information Sheet (http://www.nefmc.org/skates/index.html);														

2.2.3	Information / monitoring	60	80	100
	<p>Information on the nature and amount of bycatch is adequate to determine the risk posed by the fishery and the effectiveness of the strategy to manage bycatch.</p>	<p><u>Qualitative information</u> is available on the amount of main bycatch species affected by the fishery.</p> <p>Information is <u>adequate</u> to <u>broadly understand</u> outcome status with respect to biologically based limits.</p> <p>Information is adequate to support <u>measures</u> to manage bycatch.</p>	<p><u>Qualitative information and some quantitative information</u> are available on the amount of main bycatch species affected by the fishery.</p> <p>Information is sufficient to estimate outcome status with respect to biologically based limits.</p> <p>Information is adequate to support a <u>partial strategy</u> to manage main bycatch species.</p> <p>Sufficient data continue to be collected to detect any increase in risk to main bycatch species (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the strategy).</p>	<p><u>Accurate and verifiable information</u> is available on the amount of all bycatch and the consequences for the status of affected populations.</p> <p>Information is <u>sufficient</u> to quantitatively estimate outcome status with respect to biologically based limits with a <u>high degree of certainty</u>.</p> <p>Information is adequate to support a <u>comprehensive strategy</u> to manage bycatch, and evaluate with a high degree of certainty whether a strategy is achieving its objective.</p> <p>Monitoring of bycatch data is conducted in sufficient detail to assess ongoing mortalities to all bycatch species.</p>
Scoring Comments				
Bycatch in Northeast Region fisheries is monitored primarily through the NEFOP. In addition, discards are to be reported on Northeast Region FVTR. As such, FVTR data represent a comprehensive source of information on total fishing effort, location, catch, and bycatch (NAMFC and NEFMC 2007). Also, the Bycatch Reduction Engineering				

Program provides a valuable source of funding for information, know-how and research on ways to minimize bycatch and the impact of fishing.

Score by UoC												
FedGN	80	FedLL	80	FedTR	80	AFGN	80	AFL	80	AFTR	80	

Rational

Federal

Gillnet. As there are no main bycatch species for this UoC, it meets SG80 and this is the score allocated. None of the SG100 issues are met. The overall score is 80.

Trawlers. As there are no main bycatch species for this UoC, it meets SG80 and this is the score allocated. None of the SG100 issues are met. The overall score is 80.

Longlines. As there are no main bycatch species for this UoC, it meets SG80 and this is the score allocated. None of the SG100 issues are met. The overall score is 80.

ASFMC

Gillnet. As federal above; score is 80.

Trawlers. As federal above; score is 80.

Longlines. As federal above; score is 80.

Audit Trace References

Zollett 2009; Warden 2010; NMFS 2011b

2.3	Endangered, Threatened and Protected (ETP) species			
2.3.1	Status	60	80	100
	<p>The fishery meets national and international requirements for protection of ETP species.</p> <p>The fishery does not pose a risk of serious or irreversible harm to ETP species and does not hinder recovery of ETP species.</p>	<p>Known effects of the fishery are <u>likely</u> to be within limits of national and international requirements for protection of ETP species.</p> <p>Known direct effects are <u>unlikely</u> to create <u>unacceptable impacts</u> to ETP species.</p>	<p>The effects of the fishery are known and are <u>highly likely</u> to be within limits of national and international requirements for protection of ETP species.</p> <p>Direct effects are <u>highly unlikely</u> to create <u>unacceptable impacts</u> to ETP species.</p> <p>Indirect effects have been considered and are thought to be unlikely to create unacceptable impacts.</p>	<p>There is a <u>high degree of certainty</u> that the effects of the fishery are within limits of national and international requirements for protection of ETP species.</p> <p>There is a high degree of confidence that there are no significant detrimental effects (direct and indirect) of the fishery on ETP species.</p>

Scoring Comments

North Atlantic Right whale: A 2010 assessment (draft) indicates that the average annual human-related mortality and serious injury exceeds the PBR and considers that no mortality or serious injury for this stock can be considered insignificant given its status. Given the recently implemented regulations designed to reduce the risk of ship strikes and entanglement in fishing gear, the 2010 BO concludes that the estimated serious injury or mortality of one (1) right whale per year, as a result of fisheries entanglement, is not likely to reduce appreciably the likelihood of both survival and recovery of the North Atlantic right whale population.

Humpback whale: The estimated increases in the Gulf of Maine stock and the North Atlantic populations of humpback whales indicate that these populations are recovering despite continued interactions with commercial fisheries inside the U.S. EEZ. While takes of humpback whales continue to be possible under the continued authorization of the SD FMP, the level of take is not expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of this species. The relatively new broad based gear modifications of the ALWTRP are expected to reduce the risk of entanglements (NMFS 2010b).

Fin and sei whales: Serious injury and mortality entanglements of fin and sei whales have been documented but occur at a level below PBR for both species. While takes of fin and sei whales continue to be possible under the continued authorization of the SD FMP, the level of take is not expected, directly or indirectly, to reduce appreciably the

likelihood of both the survival and recovery of these species.

Loggerhead sea turtle: Although some areas are indicating increasing trends at nesting beaches (Southwest Indian Ocean and South Atlantic Ocean), available information about anthropogenic threats to juveniles and adults indicate possible unsustainable additional mortalities. NMFS anticipates the annual take of up to one (1) individual over a 5-year average in trawl gear; which may be lethal or non-lethal and the annual take of up to one (1) individual over a 5-year average in gillnet gear, which may be lethal or non-lethal. The continued operation of the fishery will not affect the protection of nests, nesting beaches, and the marine environment. Therefore, the continued operation of the SD fishery within the constraints of the current SD FMP will have no appreciable reduction in the ability to achieve the Listing Factor Recovery Criteria.

Leatherback sea turtle: Of the Atlantic sea turtle species, leatherbacks seem to be the most vulnerable to entanglement in fishing gear, trap/pot gear in particular. Nest counts in many areas of the Atlantic Ocean show increasing trends. NMFS anticipates the annual lethal or non-lethal take of up to four (4) individuals in trawl gear and gillnet gear combined. The annual loss of up to four (4) leatherback sea turtles, together with an increase in nesting, is not expected to affect the positive growth rate in the female population of leatherback sea turtles nesting in Puerto Rico, St. Croix, and Florida. The continued operation of the SD fishery within the constraints of the current SD FMP will not appreciably reduce the likelihood of recovery for leatherback sea turtles in the Atlantic.

Kemp's ridley sea turtle: Nesting has increased from 247 nesting females in the 1985 nesting-season to 4,047 nesting females in 2006. Overall, there were an estimated 7,000-8,000 adult female Kemp's ridleys in 2006. NMFS anticipates the annual lethal or non-lethal take of up to four (4) individuals in trawl gear and gillnet gear combined. The continued loss of up to four (4) Kemp's ridleys annually is not expected to change the trend in increased nesting. With an increasing nesting trend, the loss of four (4) Kemp's ridleys will not compromise the continued existence of the species. Therefore, the continued operation of the SD fishery within the constraints of the current SD FMP will not appreciably reduce the likelihood of recovery for the species.

Green sea turtle: Overall, based on mean annual reproductive effort, the report estimated that 108,761 to 150,521 females nest each year among the 46 threatened and endangered nesting sites included in the most recent evaluation. NMFS anticipates the annual lethal or non-lethal take of up to five (5) individuals in trawl gear and gillnet gear combined. The annual loss of five (5) green sea turtles, together with an increase in nesting, is not expected to materially affect the increasing to stable trend in the number of green sea turtles on the foraging grounds in the Atlantic. Therefore, the continued operation of the SD fishery will not appreciably reduce the likelihood of recovery for green sea turtles in the Atlantic.

Harbor porpoise: The best current abundance estimate for the Gulf of Maine / Bay of Fundy harbor porpoise is 89,054 (Waring 2010 draft). The PBR is 703 animals. A recent assessment suggests that the total annual human-caused mortality now exceeds the PBR.

Bottlenose dolphin: These dolphins, which range from Central Florida to Long Island, are managed as five management units or sub-stocks. For those stocks where the level of mortality can be estimated, the PBR is not exceeded. Some populations remain resident in bays, sounds and estuaries but most of these populations have undetermined PBR as scientists continue working to define these populations

Score by UoC											
FedGN	80	FedLL	80	FedTR	80	AFGN	80	AFLI	80	AFTR	80

Rational

Federal

Gillnet.

North Atlantic Right whale: Both scoring issues of SG60 are met for all gear types. Given the low encounter rates in the US SD fishery, it is highly likely that known effects are within limits of national and international requirements, and unlikely to create unacceptable impacts. Indirect effects have been considered in BOs and are thought to be unlikely to create unacceptable impacts. As such, the three scoring issues of SG80 are also met. Given the nature of information and data and entanglements, the two scoring issues under SG100 are not met. Score 80.

Humpback whale: Both scoring issues of SG60 are met. While the rate of humpback entanglements in fishing gear continues to be of concern to resource managers, it is highly likely that known effects are within limits of national and international requirements, and unlikely to create unacceptable impacts. Indirect effects have been considered in BOs and are thought to be unlikely to create unacceptable impacts. As such, the three scoring issues of SG80 are also met. Due to the number of entanglements that could not be assigned to a given fishery and past reports of mortalities, the two scoring issues under SG100 are not met. Score 80.

Fin whale: Both scoring issues of SG60 are met. Given the restrictions and regulations in place, it is highly likely that known effects are within limits of national and international requirements, and unlikely to create unacceptable impacts. Indirect effects have been considered in BOs and are thought to be unlikely to create unacceptable impacts. As such, the three scoring issues of SG80 are also met. Due to the low encounter rates, it is considered that the two scoring issues under SG100 are also met. Score 100.

Sei whale: Both scoring issues of SG60 are met. Given the restrictions and regulations in place, it is highly likely that known effects are within limits of national and international requirements, and unlikely to create unacceptable impacts. Indirect effects have been considered in BOs and are thought to be unlikely to create unacceptable impacts. As such, the three scoring issues of SG80 are also met. Due to the low encounter rates, it is considered that the two scoring issues under SG100 are also met. Score 100.

Loggerhead sea turtle: Both scoring issues of SG60 are met. The three scoring issues of SG80 are also met given the low take anticipated. Because of the uncertainties in population structure and in population abundance, the two scoring issues of SG100 are not met. Score 80.

Leatherback sea turtle: Both scoring issues of SG60 are met. The three scoring issues of SG80 are also met. On the basis of the information provided, there is a high degree of certainty that the effects of the fishery are within limits of national and international requirements for protection of this ETP species. Given the low take anticipated and given management and regulatory measures in place and their monitoring/evaluation, there is also a high degree of confidence that there are no significant detrimental effects of the fishery on this ETP species. As such, the two scoring issues under SG100 are met. Score 100.

Kemp's ridley sea turtle: Both scoring issues of SG60 are met. The three scoring issues of SG80 are also met. On the basis of the information provided, there is a high degree of certainty that the effects of the fishery are within limits of national and international requirements for protection of this ETP species. On the basis of the information provided on management and regulatory measures in place and their monitoring/evaluation, there is also a high degree of confidence that there are no significant detrimental effects of the fishery on this ETP species. As such, the two scoring issues under SG100 are met. Score 100.

Green sea turtle: Both scoring issues of SG60 are met. The three scoring issues of SG80 are also met. On the basis of the information provided, there is a high degree of certainty that the effects of the fishery are within limits of national and international requirements for protection of this ETP species. On the basis of the information provided on management and regulatory measures in place and their monitoring/evaluation, there is also a high degree of confidence that there are no significant detrimental effects of the fishery on this ETP species. As such, the two scoring issues under SG100 are met. Score 100.

Harbor porpoise: Both scoring issues of SG60 are met, as evidenced by the stock status and by the HPTRP) While the three scoring issues of SG80 are met on the basis of the programs in place, we are concerned with the emerging issue of the total annual human-caused mortality now exceeding the PBR. As we cannot attribute the impact of the SD fishery on the basis of the information available, this concern is captured in the condition raised in 2.3.3 on the information available in relation to the difficulty in assigning interactions to a specific fishery or Unit of Certification The two scoring issues of SG100 are not met as the information available is only available at the gear level, without due reference or attribution to the SD fishery itself. Score 80.

Bottlenose dolphin: Both scoring issues of SG60 are met, as evidence by the stock status and by the BDTRP. On the basis of the programs and plans in place, the three scoring issues of SG80 are met. The two scoring issues of SG100 are not met given that the information available is only available at the gear level, without due reference or attribution to the dogfish fishery itself. Score 80.

Thus the overall score awarded is 80.

Trawlers. As Federal gill net. Score 80.

Longlines. As Federal gill net. Score 80.

ASFMC

Gillnet. As Federal gill net. Score 80.

Trawlers. As Federal gill net. Score80.

Longlines. As Federal gill net. Score80.

Audit Trace References

NMFS 2010b; Waring (2010); MAFMC 2010a

2.3.2	Management strategy	60	80	100
	<p>The fishery has in place precautionary management strategies designed to:</p> <ul style="list-style-type: none"> - meet national and international requirements; - ensure the fishery does not pose a risk of serious or irreversible harm to ETP species; - ensure the fishery does not hinder recovery of ETP species; and - minimize mortality of ETP species. 	<p>There are <u>measures</u> in place that minimize mortality, and are expected to be highly likely to achieve national and international requirements for the protection of ETP species.</p> <p>The measures are <u>considered likely</u> to work, based on <u>plausible argument</u> (e.g. general experience, theory or comparison with similar fisheries/species).</p>	<p>There is a <u>strategy</u> in place for managing the fishery's impact on ETP species, including measures to minimize mortality, that is designed to be highly likely to achieve national and international requirements for the protection of ETP species.</p> <p>There is an <u>objective basis for confidence</u> that the strategy will work, based on <u>information</u> directly about the fishery and/or the species involved.</p> <p>There is <u>evidence</u> that the strategy is being implemented successfully.</p>	<p>There is a <u>comprehensive strategy</u> in place for managing the fishery's impact on ETP species, including measures to minimize mortality, that is designed to achieve <u>above</u> national and international requirements for the protection of ETP species.</p> <p>The strategy is mainly based on information directly about the fishery and/or species involved, and a <u>quantitative analysis</u> supports <u>high confidence</u> that the strategy will work.</p> <p>There is <u>clear evidence</u> that the strategy is being implemented successfully, and intended changes are occurring. There is evidence that the strategy is achieving its objective.</p>
Scoring Comments				
<p>Under the Endangered Species Act – Section 7 Consultation Process, Federal agencies are required to consult with the NMFS (or USFWS) when actions they fund, authorize or carry out may affect any listed species under the ESA. Section 7(a) 1 of the ESA requires all Federal agencies to use their authorities to conduct conservation programs.</p> <p>NOAA Fisheries Service implemented the Atlantic Large Whale Take Reduction Plan (ALWTRP) to reduce injuries and deaths of large whales due to incidental entanglement in fishing gear (http://www.nero.noaa.gov/whaletrp/).</p> <p>The Sea Turtle Protection Program (http://www.nero.noaa.gov/prot_res/seaturtles/) provides information, recovery plans for various species of sea turtles as well as status reviews.</p>				

The MAFMC and NEFMC identify possible ETP species and their interactions with the SD fishery in their management plans (e.g. MAFMC and NEFMC 1999).

Some regulations specify measures or restrictions (gear, area) aiming directly at the protection of ETP species. For instance: (extracts from NMFS 2010c)

Gillnet requirements for protected species must comply with the provisions of the:

1. Atlantic Large Whale Take Reduction Plan: Requirements include time-area closures (with limited exceptions) and gear modifications (e.g., weak links, anchoring requirements, sinking ground line, gear marking) from Maine through the east coast of Florida.
2. Harbor Porpoise Take Reduction Plan: Requirements include time-area closures and seasonal gear modifications (e.g., pingers in the Gulf of Maine and gear requirements in the Mid-Atlantic) from Maine through North Carolina.
3. Bottlenose Dolphin Take Reduction Plan: Requirements include time-area closures and gear restrictions (e.g., prohibited night sets, net tending, gear length requirements, etc.) from New Jersey through the east coast of Florida.
4. Gear Restrictions in the NC/VA Large Mesh Gillnet Fishery for the Protection of Sea Turtles. Requirements include seasonal time-area closures to large mesh gillnet fishing (greater than or equal to 7 inches).

Score by UoC												
FedGN	85	FedLL	80	FedTR	80	AFGN	85	AFL	80	AFTR	80	

Rational

Federal

Gillnet.

North Atlantic Right whale: The two scoring issues under SG60 are met. The three scoring issues of SG80 are also met through the provisions of the ESA and the implementation of the Atlantic Large Whale Take Reduction Program. The first is met through the specific strategies in place to minimize mortality, the second and third are addressed by the analyses included in BOs based on the information from the fishery. The first scoring issue under SG100 is not met as the comprehensive strategy in place is designed and implemented to meet national standards (not to exceed them). The second scoring issue under SG100 is not met as the data available do not lead to quantitative analyses and high confidence. The third scoring issue is not met although there are signs of recovery from some of the ETP species. Score 80.

Humpback whale: Same as above (see Federal waters – Gillnet – North Atlantic Right Whale). Score 80.

Fin whale: Same as above (see Federal waters – Gillnet – North Atlantic Right Whale). Score 80.

Sei whale: Same as above (see Federal waters – Gillnet – North Atlantic Right Whale). Score 80.

Loggerhead sea turtle: The two scoring issues under SG60 are met. The three scoring issues of SG80 are also met through the provisions of the ESA, the implementation of the Sea Turtle Protection Program and the Gear Restrictions in the NC/VA Large Mesh Gillnet Fishery for the Protections of Sea Turtles. The first is met through the specific strategies in place to minimize mortality, the second and third are addressed by the analyses included in BOs based on the information from the fishery. The first scoring issue

under SG100 is not met as the comprehensive strategy in place is designed and implemented to meet national standards (not to exceed them). The second scoring issue under SG100 is not met as the data available do not lead to quantitative analyses and high confidence. The third scoring issue is not met although there are signs of recovery from some of the ETP species. Score 80.

Leatherback sea turtle: Same as above (see Federal waters – Gillnet – Loggerhead sea turtle). Score 80.

Kemp’s ridley sea turtle: Same as above (see Federal waters – Gillnet – Loggerhead sea turtle). Score 80.

Green sea turtle: Same as above (see Federal waters – Gillnet – Loggerhead sea turtle). Score 80.

Harbor porpoise: The two scoring issues under SG60 are met. The three scoring issues of SG80 are also met through the provisions of the MMPA and the Harbor Porpoise Take Reduction Plan. The first is met through the specific strategies in place to minimize mortality, the second and third are addressed by the analyses included in BOs based on the information from the fishery. The first scoring issue under SG100 is not met as the comprehensive strategy in place is designed and implemented to meet national standards (not to exceed them). The second scoring issue under SG100 is met as the data available leads to quantitative analyses and high confidence. The third scoring issue is also met given the peer review reports on status. Score 95.

Bottlenose dolphin: The two scoring issues under SG60 are met. The three scoring issues of SG80 are also met through the provisions of the MMPA and the BDTRP. The first is met through the specific strategies in place to minimize mortality, the second and third are addressed by the analyses included in Biological Opinions based on the information from the fishery. The first scoring issue under SG100 is not met as the comprehensive strategy in place is designed and implemented to meet national standards (not to exceed them). The second scoring issue under SG100 is met as the data available leads to quantitative analyses and high confidence. The third scoring issue is also met given the peer review reports on status. Score 95.

The overall score is 85.

Trawlers.

Loggerhead sea turtle. The two scoring issues under SG60 are met. The three scoring issues of SG80 are also met through the provisions of the ESA and the implementation of the Sea Turtle Protection Program. The first is met through the specific strategies in place to minimize mortality within these programs, the second and third are addressed by the analyses included in Biological Opinions based on the information from the fishery. The first scoring issue under SG100 is not met as the comprehensive strategy in place is designed and implemented to meet national standards (not to exceed them). The second scoring issue under SG100 is not met as the data available do not lead to quantitative analyses and high confidence. The third scoring issue is not met although there are signs of recovery from some of the ETP species. Score 80. **Leatherback sea turtle.** See Federal waters – Trawlers – Loggerhead sea turtle. Score 80.

Kemp’s ridley sea turtle. See Federal waters – Trawlers – Loggerhead sea turtle. Score 80.

Green sea turtle: See Federal waters –Trawlers – Loggerhead sea turtle. Score 80.

The overall score is 80.

Longlines.

North Atlantic Right whale. See Federal waters – Gillnet – North Atlantic Right Whale. Score 80.

Humpback whale. See Federal waters – Gillnet – North Atlantic Right Whale. Score 80.

Fin whale. See Federal waters – Gillnet – North Atlantic Right Whale. Score 80.

Sei whale. See Federal waters – Gillnet – North Atlantic Right Whale. Score 80.

The overall score is 80.

ASFMC

Gillnet. As federal above; score is 85.

Trawlers. As federal above; score is 80.

Longlines. As federal above; score is 80.

Audit Trace References

MAFCM and NEFMC 1999; NMFS 2010c ; Waring et al. 2009; Waring et al. 2010 (draft); <http://www.nero.noaa.gov/whaletrp/>; http://www.nero.noaa.gov/prot_res/seaturtles/; <http://www.nero.noaa.gov/whaletrp/>; <http://www.nero.noaa.gov/porptrp/>; <http://www.nmfs.noaa.gov/pr/interactions/trt/bdtrp.htm>; http://www.nero.noaa.gov/prot_res/seaturtles/.

2.3.3	Information / monitoring	60	80	100
	<p>Relevant information is collected to support the management of fishery impacts on ETP species, including:</p> <ul style="list-style-type: none"> - information for the development of the management strategy; - information to assess the effectiveness of the management strategy; and - information to determine the outcome status of ETP species. 	<p>Information is <u>adequate</u> to <u>broadly understand</u> the impact of the fishery on ETP species.</p> <p>Information is adequate to support <u>measures</u> to manage the impacts on ETP species</p> <p><u>Information</u> is sufficient to <u>qualitatively</u> estimate the fishery related mortality of ETP species.</p>	<p>Information is <u>sufficient</u> to determine whether the fishery may be a threat to protection and recovery of the ETP species, and if so, to measure trends and support a <u>full strategy</u> to manage impacts.</p> <p><u>Sufficient data</u> are available to allow fishery related mortality and the impact of fishing to be <u>quantitatively</u> estimated for ETP species.</p>	<p>Information is <u>sufficient</u> to <u>quantitatively</u> estimate outcome status with a high degree of certainty.</p> <p>Information is adequate to support a <u>comprehensive strategy</u> to manage impacts, minimize mortality and injury of ETP species, and evaluate with a high degree of certainty whether a strategy is achieving its objectives.</p> <p><u>Accurate and verifiable information</u> is available on the magnitude of all impacts, mortalities and injuries and the consequences for the status of ETP species</p>

Scoring Comments

The monitoring programs (logbooks, observer programs) for ETP species are the same as those identified in Principle 1. These programs transcend the boundaries of UoC and apply to all UoC. Data on ETP species are analyzed and documented in BOs prior to being considered in various FMPs (NMFS 2010b).

Estimates of incidental take of sea turtles are produced in the 2010 BO. Incidental takes of right, humpback, fin and sei whales are not authorized under the MMPA.

Whales: Entanglement Reports are published regularly (NMFS 2009a, b; NMFS 2010e). For listed large whales, we can only rarely attribute takes to a specific fishery. NFMS attributes takes to gear types and not specific fisheries.

Sea turtles: Observer coverage has been used as the principal means to estimate sea turtle bycatch in the SD fishery and to monitor incidental take levels. The loggerhead sea turtle take estimates were generated using statistical estimates that are not feasible to conduct on an annual basis. These are done approximately every 5 years. For species other than loggerheads, NMFS will use all available information (e.g., observed takes, changes in fishing effort, etc.) to determine if the annual incidental take level in the BO

has been met or exceeded.

Dolphins and porpoises: as is the case for whales, the information available to calculate incidental mortality is typically available only at the gear level, without reference or attribution to specific fisheries.

Score by UoC												
FedGN	65	FedLL	65	FedTR	65	AFGN	65	AFL	65	AFTR	65	

Rational

Federal Gillnet.

North Atlantic Right whale. The three scoring issues of SG60 are met: the information is adequate to broadly understand the impact of the fishery on North Atlantic Right Whale and to support measures to manage the impacts; it is also sufficient to qualitatively estimate the fishery related mortality of the species. The information is also sufficient to determine whether the fishery may be a threat to protection and recovery of the species, to measure trends and to support a full strategy to manage impacts, as demonstrated by the numerous reports on ETP species and by the FMPs and measures in place. As such, the first scoring issue of SG 80 is met. While the 2010 BO provides estimates of incidental take, sufficient data are not available to allow fishery related mortality and the impact of fishing to be quantitatively estimated. As such, the second scoring issue of SG80 is not met. The issue is related to the difficulty in assigning interactions to a specific fishery or UoC. Given the nature of the information available, none of the scoring issues of SG100 are met. The overall score is thus 65.

Humpback whale. See Federal waters – Gillnet – North Atlantic Right Whale. Score 65.

Fin whale. See Federal waters – Gillnet – North Atlantic Right Whale. Score 65.

Sei whale. See Federal waters – Gillnet – North Atlantic Right Whale. Score 65.

Loggerhead sea turtle. See Federal waters – Gillnet – North Atlantic Right Whale. Score 65.

Leatherback sea turtle. See Federal waters – Gillnet – North Atlantic Right Whale. Score 65.

Kemp's ridley sea turtle. See Federal waters – Gillnet – North Atlantic Right Whale. Score 65.

Green sea turtle. See Federal waters – Gillnet – North Atlantic Right Whale. Score 65.

Harbor porpoise. Same as above (see Federal waters – Gillnet – North Atlantic Right Whale).

Bottlenose dolphin. Same as above (see Federal waters – Gillnet – North Atlantic Right Whale).

The overall score is 65. *A condition is raised to the certification (Condition 9).*

Trawlers.

Loggerhead sea turtle: See Federal waters – Gillnet – North Atlantic Right Whale. Score 65.

Leatherback sea turtle: See Federal waters – Gillnet – North Atlantic Right Whale. Score 65.

Kemp's ridley sea turtle: See Federal waters – Gillnet – North Atlantic Right Whale. Score 65.

Green sea turtle: See Federal waters – Gillnet – North Atlantic Right Whale. Score 65.

The overall score is 65. *A condition is raised to the certification (Condition 10).*

Longlines. As federal gill net above. Score 65. *A condition is raised to the certification (Condition 11).*

ASFMC

Gillnet. As federal gill net above. Score 65. *A condition is raised to the certification (Condition 12).*
Trawlers. As federal trawler above. Score 65. *A condition is raised to the certification (Condition 13).*
Longlines. As federal longlines above. Score 65. *A condition is raised to the certification (Condition 14).*

Audit Trace References

NMFS 2010b; NMFS 2009a,b; NMFS 2010e

2.4	Habitat																
2.4.1	Status				60				80				100				
	The fishery does not cause serious or irreversible harm to habitat structure, considered on a regional or bioregional basis, and function.				The fishery is <u>unlikely</u> to reduce habitat structure and function to a point where there would be serious or irreversible harm.				The fishery is <u>highly unlikely</u> to reduce habitat structure and function to a point where there would be serious or irreversible harm.				There is <u>evidence</u> that the fishery is highly unlikely to reduce habitat structure and function to a point where there would be serious or irreversible harm.				
Scoring Comments																	
Of the gear types covered by this Certification, the bottom trawl is the only one known to significantly affect benthic marine habitats (MAFMC 2010a). Only 5% of the reported landings of SD in FY 2008 were from bottom trawls. For trawls, there were no specific concerns expressed by stakeholders, except for a general one regarding their impact on bottom structure and fauna. Of particular relevance is the observation that there were no issues with respect to fishery interactions with corals due to the type of substrate preferred by SD and the fact that SD is part of the epibenthic fauna. Also, the risks of gear loss are minimized because of short soak times (regulated) for gillnets. NMFS has determined that the actions being considered for the management of SD is not likely to adversely modify or destroy designated critical habitat for North Atlantic right whales (NMFS 2010b).																	
		Score by UoC															
		FedGN	80	FedLL	80	FedTR	80	AFGN	80	AFLI	80	AFTR	80				
Rational																	
In view of the above comments, the scoring issues under SG60 and SG80 are both met. The issue under SG100 is not met, as the context (widely distributed species, ubiquitous, with complex habitat) is one where evidence is difficult to obtain on habitat structure and its function Score: for all Units of Certification: 80																	
Audit Trace References																	
MAFMC 2010a; NMFS 2010b.																	

2.4.2	Management strategy	60	80	100
	<p>There is a strategy in place that is designed to ensure the fishery does not pose a risk of serious or irreversible harm to habitat types.</p>	<p>There are measures in place, if necessary, that are expected to achieve the Habitat Outcome 80 level of performance.</p> <p>The measures are considered likely to work, based on plausible argument (e.g. general experience, theory or comparison with similar fisheries/habitats).</p>	<p>There is a partial strategy in place, if necessary, that is expected to achieve the Habitat Outcome 80 level of performance or above.</p> <p>There is some objective basis for confidence that the partial strategy will work, based on information directly about the fishery and/or habitats involved.</p> <p>There is some evidence that the partial strategy is being implemented successfully.</p>	<p>There is a strategy in place for managing the impact of the fishery on habitat types.</p> <p>The strategy is mainly based on information directly about the fishery and/or habitats involved, and testing supports high confidence that the strategy will work.</p> <p>There is clear evidence that the strategy is being implemented successfully, and intended changes are occurring. There is some evidence that the strategy is achieving its objective.</p>

Scoring Comments

Susceptibility and recovery scores were developed for various gear (trawl, scallop dredge, hydraulic dredge, longline and gillnet, trap) and substrate (mud, sand, Granule-pebble, cobble, boulder) types; the results for trawls, longline and gillnets are the most relevant for the SD fishery. This work was done in support of the formal framework established to evaluate the impact of fisheries on habitat. This framework is documented in reviews of EFH, e.g. NEFMC 2010a, NEFMC 2010b. Habitat considerations have been routinely included in FMPs which typically include a section on EFH. Evidence of these can be found in MAFMC 2010a, ASFMC 2002 and MAFMC & NEFMC 1999. EFH considerations are an integral part of the fisheries management process, influence management measures and fishing practices, and are reviewed as necessary to support strategic decision, as evidenced by supporting documents such as NEFMC 2010a, NEFMC 2010b, NEFMC 2010c.

In addition to the above, MPAs are used to conserve natural and cultural heritage, and/or to support sustainable production of marine resources.

	Score by UoC													
	FedGN	95	FedLL	95	FedTR	95	AFGN	95	AFL	95	AFTR	95		
Rational														
Given the management measures and plans in place and that these are considered likely to work while there is some evidence in the reviews of EFH that the partial strategy is being implemented successfully all SG60 and SG80 issues are being met. The first issue of SG100 is met with the EFH process which applies to actions (such as fisheries) that could adversely impact the habitat and with the implementation of a program of MPAs. The 2nd issue of SG100 is met through the Habitat Sections of the FMPs and by the reviews and evaluations that are an integral part of Amendments to the FMPs. The 3 rd issue is not met as the evidence is descriptive and circumstantial.														
Score: for all UoC: 95														
Audit Trace References														
NEFMC 2010a, 2010b; MAFMC 2010a, ASFMC 2002, MAFMC and NEFMC 1999. Also: http://www3.mpa.gov/mpa_lib/websites.aspx														

2.4.3	Information / monitoring	60	80	100
	Information is adequate to determine the risk posed to habitat types by the fishery and the effectiveness of the strategy to manage impacts on habitat types.	<p>There is a basic understanding of the types and distribution of main habitats in the area of the fishery.</p> <p>Information is adequate to broadly understand the nature of the main impacts of gear use on the main habitats, including spatial overlap of habitat with fishing gear</p>	<p>The nature, distribution and vulnerability of all main habitat types in the fishery area are known at a level of detail relevant to the scale and intensity of the fishery.</p> <p>Sufficient data are available to allow the nature of the impacts of the fishery on habitat types to be identified and there is reliable information on the spatial extent of interaction, and the timing and location of use of the fishing gear.</p> <p>Sufficient data continue to be collected to detect any increase in risk to habitat (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).</p>	<p>The distribution of habitat types is known over their range, with particular attention to the occurrence of vulnerable habitat types.</p> <p>Changes in habitat distributions over time are measured.</p> <p>The physical impacts of the gear on the habitat types have been quantified fully.</p>

Scoring Comments

NMFS provides guidance to FMCs for identifying and describing EFH of their managed species. Consistent with this guidance, the species reports present information on current and historic stock sizes, geographic range, and the period and location of major life history stages. The habitats of managed species are described by the physical, chemical, and biological components of the ecosystem where the species occur. Information on habitat requirements is provided for each life history stage, and it includes, where available, habitat and environmental variables that control or limit distribution, abundance, growth, reproduction, mortality, and productivity.

MSA requires FMPs to minimize, to the extent practicable, the adverse effects of fishing on fish habitats. To meet this requirement, fishery managers would ideally be able to quantify such effects and visualize their distributions across space and time. The SASI model provides such a framework, enabling managers to better understand: (1) the nature of fishing gear impacts on benthic habitats, (2) the spatial distribution of benthic habitat vulnerability to particular fishing gears, and (3) the spatial and temporal distribution of realized adverse effects from fishing activities on benthic habitats.

	Score by UoC													
	FedGN	85	FedLL	85	FedTR	85	AFGN	85	AFL	85	AFTR	85		
Rational														
Both scoring issues under SG 60 are met. The distribution of habitat types is known over their range and vulnerable habitat types are defined in the EFH process (SG80 first issue) while the EFH process satisfies the 2 nd and 3 rd issues under SG80. Through the EFH initiatives, the distribution of habitat types is known over their range, with particular attention to the occurrence of vulnerable habitat types. As such, the first scoring issue of SG100 is met. More work needs to be done to fully characterize habitat distributions and changes over time as well as quantitatively evaluate impacts. Accordingly, the second and third issues under SG100 are not met.														
Score: for all UoCs: 85														
Audit Trace References														
NOAA (199a), NEFMC 2010a, NEFMC 2010b, NEFMC 2010c, ICES 2010.														

2.5	Ecosystem													
2.5.1	Status	60					80					100		
		The fishery is <u>unlikely</u> to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.					The fishery is <u>highly unlikely</u> to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.					There is <u>evidence</u> that the fishery is highly unlikely to disrupt the key elements underlying ecosystem structure and function to a point where there would be a serious or irreversible harm.		
Scoring Comments														
<p>Scientists believe that SD are part of a complex ecosystem and that their role, both as predator and competitor with virtually every marine predator within the Northwest Atlantic ocean ecosystem (ASMFC 2002), is complex and only partly understood. The role of SD as predator has been documented in a number of scientific and technical documents where feeding by SD on a wide variety of fish and invertebrates is described as being opportunistic in nature. Despite this role as predator and competitor, both the SD and traditional groundfish have been abundant in the past and many groundfish stocks have been rebuilding in recent years despite the abundance of SD.</p> <p>Multi-species simulation work (Link 2002) suggests that the principal effect of elimination of SD would be to increase the population of various species of skate, with little impact on traditional groundfish populations.</p> <p>Foremost, maintaining SD around an MSY level is likely to ensure that the fishery is highly unlikely to disrupt key elements of the ecosystem.</p>														
	Score by UoC													
	FedGN	80	FedLL	80	FedTR	80	AFGN	80	AFLl	80	AFTR	80		
Rational														
<p>The single scoring issues at the SG60 and SG80 levels are met, as indicated by simulation studies making use of diet data by anecdotal information on groundfish and SD population trends and by maintaining the SD fishery around an MSY level. As this is based on inferences and limited (in relation to the size and complexity of the problem) observations, the single scoring issue for SG100 is not met.</p> <p>Score: for all UoCs: 80</p>														
Audit Trace References														
ASMFC 2002; Link <i>et al.</i> (2002)														

2.5.2	Management strategy	60	80	100
	<p>There are measures in place to ensure the fishery does not pose a risk of serious or irreversible harm to ecosystem structure and function.</p>	<p>There are <u>measures</u> in place, if necessary, that take into account potential impacts of the fishery on key elements of the ecosystem.</p> <p>The measures are considered likely to work, based on <u>plausible argument</u> (e.g., general experience, theory or comparison with similar fisheries/ ecosystems).</p>	<p>There is a <u>partial strategy</u> in place, if necessary, that takes into account available information and is expected to restrain impacts of the fishery on the ecosystem so as to achieve the Ecosystem Outcome 80 level of performance.</p> <p>The partial strategy is considered likely to work, based on <u>plausible argument</u> (e.g., general experience, theory or comparison with similar fisheries/ ecosystems).</p> <p>There is <u>some evidence</u> that the measures comprising the partial strategy are being implemented successfully.</p>	<p>There is a <u>strategy</u> that consists of a <u>plan</u>, containing measures to address all main impacts of the fishery on the ecosystem, and at least some of these measures are in place. The plan and measures are based on well-understood functional relationships between the fishery and the Components and elements of the ecosystem.</p> <p>This plan provides for development of a full strategy that restrains impacts on the ecosystem to ensure the fishery does not cause serious or irreversible harm.</p> <p>The measures are considered likely to work based on <u>prior experience</u>, plausible argument or <u>information</u> directly from the fishery/ecosystems involved.</p> <p>There is <u>evidence</u> that the measures are being implemented successfully.</p>
Scoring Comments				
<p>Recognizing the complexity of role and function of SD in the ecosystem, managers adopted an approach whereby SD is managed as any other fisheries resource, i.e. as per the principles of optimal use stated in the MSA (see Principle 1 Section).</p> <p>In addition to direct considerations taken into account in the management of the SD fishery, there is an elaborate program for the implementation of a network of MPAs working in tandem with various fishery closures and restrictions.</p>				

	Score by UoC													
	FedGN	80	FedLL	80	FedTR	80	AFGN	80	AFLl	80	AFTR	80		
Rational														
Both scoring issues of SG60 are met. The three scoring issues of SG80 are also met given that the partial strategy in place is expected to meet the ecosystem outcome at the SG80 level. For instance, the role of ecosystem is taken into account in specific sections of FMPs (MAFMC & NEFMC 1999) and in the work of the ASFMC (ASFMC 2002). Also, amendments to the initial plans include an evaluation of the impact of alternatives, in sections dedicated to biological and ecological impacts. Thus, there is evidence that the measures comprising the partial strategy are being implemented successfully. It is not possible to score above SG80 because the functional relationships are not well understood due to their complexity and FMPs do not provide for the development of a full strategy (in relation to predatory role and competition with other species).														
Score: for all UoCs: 80														
Audit Trace References														
MAFM and NEFMC (1999), ASMFC (2002).														

2.5.3	Information / monitoring	60	80	100
	<p>There is adequate knowledge of the impacts of the fishery on the ecosystem.</p>	<p>Information is adequate to <u>identify</u> the key elements of the ecosystem (e.g. trophic structure and function, community composition, productivity pattern and biodiversity).</p> <p>Main impacts of the fishery on these key ecosystem elements can be inferred from existing information, but <u>have not been investigated in detail</u>.</p>	<p>Information is adequate to <u>broadly understand</u> the key elements of the ecosystem.</p> <p>Main impacts of the fishery on these key ecosystem elements can be inferred from existing information, but <u>may not have been investigated in detail</u>.</p> <p>The main functions of the Components (i.e. target, Bycatch, Retained and ETP species and Habitats) in the ecosystem are <u>known</u>.</p> <p>Sufficient information is available on the impacts of the fishery on these Components to allow some of the main consequences for the ecosystem to be inferred.</p>	<p>Information is adequate to <u>broadly understand the key elements</u> of the ecosystem.</p> <p>Main <u>interactions</u> between the fishery and these ecosystem elements can be inferred from existing information, and <u>have been investigated</u>.</p> <p>The impacts of the fishery on target, Bycatch, Retained and ETP species and Habitats are identified and the main functions of these Components in the ecosystem are <u>understood</u>.</p> <p>Sufficient information is available on the impacts of the fishery on the Components <u>and elements</u> to allow the main consequences for the ecosystem to be inferred.</p>

														Sufficient data continue to be collected to detect any increase in risk level (e.g. due to changes in the outcome indicator scores or the operation of the fishery or the effectiveness of the measures).	Information is sufficient to support the development of strategies to manage ecosystem impacts.
Scoring Comments															
Spiny dogfish are ubiquitous and their population is increasing. Their role in the ecosystem as a predator and competitor is complex and has been studied extensively, in particular because of potential impacts on the recovery of traditional groundfish species. Overall, there is a broad understanding of the role played by many of the ecosystem components impacted by the fishery although there remain a number of questions on the main consequences of the decline of many groundfish species on the ecosystem, on the changes in the relative importance of elasmobranchs and on the ability of the ecosystem to recover to its “former” state.															
	Score by UoC														
	FedGN	90	FedLL	90	FedTR	90	AFGN	90	AFLI	90	AFTR	90			
Rational															
Both issues of SG 60 are met as are the five issues of SG 80 and the first three issues of SG100. Information is adequate to broadly understand the key elements of the ecosystem, as illustrated by NOAA (2007a) which outlines SD’s role as predator in the food web. The main interactions between the fishery and the ecosystem can be inferred from existing information and have been investigated (NOAA 2007a, Link 2002). The impacts of the fishery on target, bycatch, retained and ETP species are identified (see 2.1.1, 2.2.1, 2.3.1) and the main functions of these components in the ecosystem are understood (Link 2002; ICES 2010; see also 2.1.3, 2.2.3, 2.3.3). The fourth and fifth issues of SG100 are not met. Due to the complexity of the ecosystem elements at play, the information available is not sufficient to allow the main consequences for the ecosystem to be inferred. Accordingly, the information available is not sufficient to support the development of strategies to manage ecosystem impacts.															
Score: for all UoCs: 90															
Audit Trace References															
NOAA (2007a), Link (2002), ICES (2010). See also 2.1.3, 2.2.3, and 2.3.3.															

P.3	The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable			
3.1	Governance and Policy			
3.1.1	Legal and/or customary framework The management system exists within an appropriate and effective legal and/or customary framework which ensures that it: <ul style="list-style-type: none"> - Is capable of delivering sustainable fisheries in accordance with MSC Principles 1 and 2; - Observes the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood; and - Incorporates an appropriate dispute resolution framework. 	60 The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2. The management system incorporates or is subject by law to a <u>mechanism</u> for the resolution of legal disputes arising within the system. Although the management authority or fishery may be subject to continuing court challenges, it is not indicating a disrespect or defiance of the law by repeatedly violating the same law or regulation necessary for the sustainability for the fishery.	80 The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2. The management system incorporates or is subject by law to a <u>transparent mechanism</u> for the resolution of legal disputes which is <u>considered to be effective</u> in dealing with most issues and that is appropriate to the context of the fishery. The management system or fishery is attempting to comply in a timely fashion with binding judicial decisions arising from any legal challenges.	100 The management system is generally consistent with local, national or international laws or standards that are aimed at achieving sustainable fisheries in accordance with MSC Principles 1 and 2. The management system incorporates or is subject by law to a <u>transparent mechanism</u> for the resolution of legal disputes that is appropriate to the context of the fishery and has been <u>tested and proven to be effective</u> . The management system or fishery acts proactively to avoid legal disputes or rapidly implements binding judicial decisions arising from legal challenges.

		The management system has a mechanism to <u>generally respect</u> the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to <u>observe</u> the legal rights created explicitly or established by custom of people dependent on fishing for food or livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.	The management system has a mechanism to <u>formally commit</u> to the legal rights created explicitly or established by custom on people dependent on fishing for food and livelihood in a manner consistent with the objectives of MSC Principles 1 and 2.
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Scoring Comments

Federal

The system for fisheries management is based on a Federal legal framework mainly comprised of the MSA and its subsequent up-dates; the SFA and the MSRA. *Inter alia* the MSA calls for (i) the conservation and management of the fishery resources (ii) the preparation and implementation, in accordance with national standards, of FMPs which will achieve and maintain, on a continuing basis, the OY from each fishery; and (iii) the protection of essential fishery habitat. The initial provisions of the MSA are strengthened by the MSRA which strengthens the mechanisms to deal with overfishing and requires for all stocks, whether in rebuilding programs or not, overfishing had to be ended within two years of the determination that the stock is overfished. The integration of NEPA into the fisheries management process means that national environmental policies have to be taken into consideration in drafting and implementing FMPs. The FMP must conform to the National Standards, including the need for conservation and management measures to prevent overfishing. The MPA and ESA provide for, respectively, the protection of all marine mammals and the conservation of species that are endangered or threatened throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend.

While it may be considered that the processes developed for public consultation are designed to proactively avoid the need for legal action, in the event that parties feel that, for example, management measures do not reflect the law or if Federal authorities are not implementing the law, then the option is open to seek legal redress though the US court system. There are a large number of examples of court cases related to fishery matters.

National Standard 8 requires FMPs to take into account the importance of fishing to local communities.

States

The system for fisheries management is based on the Atlantic Fisheries Coast Act and the laws and regulations of the individual states. With the act, all Atlantic coast States included in a Commission FMP must comply with certain conservation provisions of the plan or the Secretary of Commerce for NOAA may impose a moratorium in that state's waters for harvesting the species in question. None of the States included in the UoC have claimed *de minimis status*. The standard adopted for management of State fisheries includes “*conservation programs and management measures shall be designed to prevent overfishing and maintain over time, abundant, self-sustaining stocks of coastal fishery resources. In cases where stocks have become depleted as a result of overfishing and/or other causes, such programs shall be designed to rebuild, restore, and subsequently maintain such stocks so as to assure their sustained availability in fishable abundance on a long-term basis*”. The MPA and ESA provide for, respectively, the protection of all marine mammals and the conservation of species that are endangered or threatened throughout all or a significant portion of their range, and the conservation of the ecosystems on which they depend. While it may be considered that the processes developed for public consultation are designed to proactively avoid the need for legal action, in the event that parties feel that, for example, management measures do not reflect the law or if the State authorities are not implementing the law, then the option is open to seek legal redress though the US court system. There are a large number of examples of court cases related to fishery matters.

	Score by UoC											
	FedGN	90	FedLL	90	FedTR	90	AFGN	90	AFLI	90	AFTR	90
Rational												
<u>Federal</u>												
<p>Consistency with Laws. The management system is established by Law and this reflects the international standards that are aimed at achieving sustainable fisheries. These are hard laws and regulations which focus on the long term sustainability of the fisheries. National standard 6 allows for uncertainty. The legal framework extends beyond fish stocks to take account of other elements of the ecosystem. While the issue is the same for each of the scoring guidelines, it is considered relevant to score the fishery at 80.</p> <p>Legal Mechanisms. The U.S. legal system may be considered as a transparent mechanism for the resolution of legal disputes and evidence strongly suggests that this has been tested and proven to be effective. The fishery scores 100 for this issue.</p> <p>Response to Legal Challenges. Given the level of public consultation and the representation of stakeholders on the various decision making committees it may be considered that the management system acts proactively to avoid legal disputes. Evidence suggests that authorities act quickly to implement binding judicial decisions. The fishery scores 100 for this issue.</p> <p>Legal Rights. The National standards require FMPs to take into account the importance of fishing to local communities. However, this cannot be considered as a formal commitment although it would be expected that they would observe, rather than generally respect, the legal rights. At the same time, given the approach in the U.S. it is probable that if the management system did not take into account legal rights then this would be the subject of a legal process. The fishery scores 80 on this issue.</p> <p>The overall score allocated for this PI is 90. This score applies to each of the three Federal UoCs.</p>												
<u>State</u>												
<p>Consistency with Laws. The management system is established by Law and supported by regulations at the Federal and State level. These reflect the international standards that are aimed at achieving sustainable fisheries. These are hard laws and regulations which focus on the long term sustainability of the fisheries. The legal framework extends beyond fish stocks to take account of other elements of the ecosystem. While the issue is the same for each of the scoring guidelines, it is considered relevant to score the fishery at 80.</p> <p>Legal Mechanisms. The U.S. legal system may be considered as a transparent mechanism for the resolution of legal disputes and evidence strongly suggests that this has been tested and proven to be effective. The fishery scores 100 for this issue.</p> <p>Response to Legal Challenges. Given the level of public consultation and the representation of stakeholders on the various decision making committees it may be considered that the management system acts proactively to avoid legal disputes. Evidence suggests that authorities act quickly to implement binding judicial decisions. The fishery scored 100 for this issue.</p> <p>Legal Rights. The National standards require FMPs to take into account the importance of fishing to local communities. However, this cannot be considered as a formal commitment although it would be expected that they would observe, rather than generally respect, the legal rights. At the same time, given the approach in the U.S. it is</p>												

probable that if the management system did not take into account legal rights then this would be the subject of a legal process. The fishery scores 80 on this issue.

The overall score allocated for this PI is 90. This score applies to each of the three State UoCs.

Audit Trace References

The Magnusson-Stevens Fishery Conservation and Management Act; Sustainable Fisheries Act; Magnuson-Stevens Fishery Conservation and Management Reauthorization Act; ASMFC 2008. Framework Adjustment 2; ; National Environmental Policy Act; National Standards; Atlantic Coastal Fisheries Cooperative Management Act; Marine Mammal Protection Act; The Endangered Species Act; The Coastal Zone Management Act; The Oceans Act; McGuire & Harris (2010); MAFMC / NEFMC FMP and amendments and adjustments; ASFMC SD FMP & Addendums; 59 Federal Register 63326, December 8, 1994; AFMSC 2009; <http://www.mainefishermensforum.org/about.htm>; http://www.gencourt.state.nh.us/rules/state_agencies/fis600.html; <http://www.gencourt.state.nh.us/ras/html/NHTOC/NHTOC-XVIII.htm>; RI Rules & Regulations; NJ Commercial Regulations; NJ Marine Fisheries Management and Commercial Fisheries Act of 1979; Regulation 4 VAC 20-490-10; ¹ NC Division of Marine Fisheries Public Information Brochure for the Atlantic States Marine Fisheries Commission Addendum III to the Interstate Fishery Management Plan for SD; http://www.ncfisheries.net/download/022211_ASMFC_AddIII_SpinySDFMP_Feb2010.pdf; <http://www.ctd.uscourts.gov/Opinions/051805.DJS.Connecticut.pdf>; <http://www.meyerglitz.com/wildlife.html>; <http://www.gloucestertimes.com/fishing/x645322800/Fed-judge-reinstates-fishing-regs/print>; http://www.defenders.org/newsroom/press_releases_folder/2008/06_26_2008_whale_advocates_file_suit_to_protect_endangered_whales_from_ship_collisions.php

3.1.2	Consultation, roles and responsibilities	60	80	100
	<p>The management system has effective consultation processes that are open to interested and affected parties.</p> <p>The roles and responsibilities of organizations and individuals who are involved in the management process are clear and understood by all relevant parties.</p>	<p>Organizations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <u>generally understood</u>.</p> <p>The management system includes consultation processes that <u>obtain relevant information</u> from the main affected parties, including local knowledge, to inform the management system.</p>	<p>Organizations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <u>explicitly defined and well understood</u> for <u>key areas</u> of responsibility and interaction.</p> <p>The management system includes consultation processes that <u>regularly seek and accept</u> relevant information, including local knowledge. The management system demonstrates consideration of the information obtained.</p> <p>The consultation process <u>provides opportunity</u> for all interested and affected parties to be involved.</p>	<p>Organizations and individuals involved in the management process have been identified. Functions, roles and responsibilities are <u>explicitly defined and well understood</u> for <u>all areas</u> of responsibility and interaction.</p> <p>The management system includes consultation processes that <u>regularly seek and accept</u> relevant information, including local knowledge. The management system demonstrates consideration of the information and <u>explains how it is used or not used</u>.</p> <p>The consultation process <u>provides opportunity and encouragement</u> for all interested and affected parties to be involved, and <u>facilitates</u> their effective engagement.</p>

Scoring Comments

Federal

At the Federal level, the MSA established a number of regional FMCs, and through the range of consultation procedures in the two relevant to the fishery under certification (MAFMC and NEFMC) an effective consultation process has been developed and is implemented by fisheries managers. Stakeholder representation is through direct membership of the FMCs, advisory groups, committees and public consultation procedures with related scoping exercises. The functions, roles and responsibilities of each part of the process are fully explained and there is no indication that this is not understood by all parties concerned. The established processes allow information to be obtained from a wide range of sources, including local knowledge, for input into a broad range of decisions, policies and practices within the management system. This includes the mandate to consider requirements under NEPA. While there are indications (anecdotal) that the level of interest in direct involvement in the decision making process may have

reduced over time, nevertheless the management system remains open to interested or affected parties and stakeholders. In the various reports and publications, there is a clear indication of the way that the information provided by affected parties and stakeholders has been used. The procedures summarized here are applicable to the general context of fisheries management in the US and the specific case of the management of the SD resource in federal waters.

States

At the State level, the ACFCMA provides the basis for the coordinated management of coastal migratory fisheries along the US Atlantic coast. Policy is defined and implemented through the ASMFC and Atlantic coastal states must comply with mandated conservation measures in ASFMC FMPs. If Atlantic coast States included in a Commission FMP do not comply with certain conservation provisions of the plan, the Secretary of Commerce for NOAA may impose a moratorium in that state's waters for harvesting the species in question. The procedures adopted by the ASFMC provide an effective consultation process that is implemented by fisheries managers. Stakeholder representation is through representation at the State level, membership of the ASFMC, committees, advisory panels and direct public consultation. There are concise rules governing the degree of stakeholder inputs. The functions, roles and responsibilities of each part of the process are fully explained and there is no indication that this is not understood by all parties concerned. The established processes allow information to be obtained from a wide range of sources, including local knowledge, for input into a broad range of decisions, policies and practices within the management system. While anecdotal information suggests that the level of interest in direct involvement in the decision making process may have reduced over time, nevertheless the management system remains open to interested or affected parties and stakeholders. In the various reports and publications, there is a clear indication of the way that the information provided by affected parties and stakeholders has been used. The procedures summarized here are applicable to the general context of fisheries management of migratory species within the three mile limit under the jurisdiction of coastal States and the specific case of the management of the SD resource in State waters

Score by UoC											
FedGN	100	FedLL	100	FedTR	100	AFGN	100	AFL	100	AFTR	100

Rational

Federal

Organizations and Individuals. As all organizations and individuals involved in the management process have been identified and their roles have been explicitly define and appear to be well understood for all areas of responsibility and interaction, it is considered appropriate to score this issue at 100 rather than the 80 that would apply if this positive findings was only to apply to key areas.

Consultation Process. It is clear that the development of FMPs and related adjustments and the definition of annual regulations includes a comprehensive consultation process that seeks and accepts information while explaining how submissions (written and oral) have contributed to the decision making process. Accordingly, the score allocated for this issue is 100.

Stakeholder Involvement. The mandated stakeholder consultation process is rigorous, and effort is directed at a number of levels (web based information, the acceptance of written submissions, meetings open to the public where individuals are able to speak, and meetings held in different geographical locations) to ensure that there is effective engagement. On that basis the score awarded for this issue is 100.

The overall score allocated for this PI is 100. This score applies to each of the three Federal UoCs.

State

Organizations and Individuals. As federal above.

Consultation Process. As federal above.

Stakeholder Involvement. As federal above.

The overall score allocated for this PI is 100. This score applies to each of the three State UoCs.

Audit Trace References

Web sites of MAFMC, NEFMC, ASMFC, NEFSC, ACCSP, ACFHP; ASMFC 2002; ASMFC 2009;

3.1.3	Long term objectives	60	80	100									
	The management policy has clear long-term objectives to guide decision-making that are consistent with MSC Principles and Criteria, and incorporates the precautionary approach.	Long-term objectives to guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are <u>implicit</u> within management policy.	<u>Clear</u> long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are <u>explicit</u> within management policy.	<u>Clear</u> long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are <u>explicit</u> within <u>and required by</u> management policy.									
Scoring Comments													
Federal													
There are 10 national standards with which all FMPs must conform. While the terms used do not include the precautionary principle they do implicitly guide a decision making process that is consistent with the MSC principles and criteria and is <i>de facto</i> the precautionary approach. The MSRA strengthens this approach, as it requires federal managers to end overfishing and to maintain sustainable harvest of healthy fisheries. In addition, managers have an increased mandate to follow scientific advice. These requirements drive the need for sound science and data collection. The precautionary approach is exemplified by the need to establish ABCs and ACLs.													
State													
The seven standards contained in Section 805 of the ACFCMA serve as the guiding principles for the conservation and management programs contained in the ASMFC FMPs. Their consistency with the MSC principles and criteria and the precautionary approach are shown by the first principle which states “ <i>conservation programs and management measures shall be designed to prevent overfishing and maintain over time, abundant, self-sustaining stocks of coastal fishery resources. In cases where stocks have become depleted as a result of overfishing and/or other causes, such programs shall be designed to rebuild, restore, and subsequently maintain such stocks so as to assure their sustained availability in fishable abundance on a long-term basis</i> ”. ASMFC policy is clearly defined and consists of a vision, broad policies, goals strategies and tasks. The implementation of the Strategy is reviewed through annual action plans defined through an Action Plan development cycle involving staff and the Commission													
	Score by UoC												
	FedGN	100	FedLL	100	FedTR	100	AFGN	100	AFL	100	AFTR	100	
Rational													
Federal. From the above it appears evident that clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are explicit within and required by management policy. Accordingly, each federal UoC achieves a score of 100 for this PI.													
State. From the above it appears evident that clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are explicit within and required by management policy. Accordingly, each of the three State UoCs achieves a score of 100 for this PI.													

Audit Trace References
MSRA, MAFMC/NEFMC FMP; ASMFC FMP; ASMFC 2010;

3.1.4	Incentives for sustainable fishing	60	80	100
	The management system provides economic and social incentives for sustainable fishing and does not operate with subsidies that contribute to unsustainable fishing.	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2.	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and seeks to ensure that perverse incentives do not arise.	The management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2, and <u>explicitly considers</u> incentives in a <u>regular review</u> of management policy or procedures to ensure that they do not contribute to unsustainable fishing practices.

Scoring Comments

A number of factors may be considered as providing positive incentives to sustainable fishing.

- The recent changes included in the MSRA that require federal managers to end over fishing and to maintain sustainable harvest of healthy fisheries is intended to provide stability and reduce the uncertainties inherent in marine fisheries.
- The level of scientific research and data on the stocks and the related ecosystem reduces the information gap and consequently the uncertainty facing fishermen. A good example of this is the precaution used to set current SD quotas given the evidence that the biomass will reduce in the short to medium term due to the entry of weak year classes into the SSB.
- The level of stakeholder participation in the management process and the degree to which plans and rules are discussed provide stakeholders with certainty about management objectives while allowing for a participatory approach to management.
- The activities of the ASMFC allow for a unified approach to the management of the fishery to the benefit of fishermen along the coast, with an approach designed to ensure a distribution of harvest opportunities that over the years has become more equitable.

Score by UoC											
FedGN	80	FedLL	80	FedTR	80	AFGN	80	AFLI	80	AFTR	80

Rational

Federal. As the system provides for such elements as: reducing information gaps and uncertainties for fishers; strategic management planning that gives certainty about the rules and goals of management; mechanisms and opportunities, through the consultation procedures, to gain support for the management system from fishers; and clarifies roles, rights and responsibilities of the various stakeholders; and a participatory approach to management, research and other relevant processes, it may be considered that the management system provides for incentives that are consistent with achieving the outcomes expressed by MSC Principles 1 and 2. In the overall approach to fisheries management in the U.S. it is considered that no perverse incentives exist that would cause fishermen to harvest stocks in an unsustainable way. At the same time, the auditors have not seen evidence that incentives have been considered explicitly; accordingly a score of 80 may only be awarded for this PI. This is applicable to all three federal UoCs.

In scoring this PI, one issue that the auditors considered was the meaning of the term “*perverse incentives*”. In the MSC FAM this is defined as “*incentives for fishers to fish unsustainably, and that the system is seeking to ensure that perverse incentives do not arise. For instance, management systems should not include subsidies that obviously contribute to unsustainable fishing. Since there is not yet international agreement on what actions should be considered subsidies and which of these may be considered “good” or “bad” under different circumstances, certification bodies should not attempt to identify and classify all subsidies in the fishery under evaluation. Instead, they should only take note of any issues that are quite clearly and obviously perverse incentives that are contributing to, or have significant potential to contribute to, unsustainable fishing*”. The issue for consideration reflects the nature of the fishery i.e. market demand is for loins of a certain size and these are only available from individuals > 80 cm which is almost exclusively the females. As has been shown in the past, the targeting of females led to unsustainable fishing, with a skewing of the sex ratio, reduced average sizes and lower reproduction. At one time also, the SD fishery was considered by some as an “exit” fishery i.e. an objective was to fish down the resource as a high population of SD was thought to be detrimental to the recovery in the populations of other ground fish species. These issues appear to be no longer applicable and thus have not been taken into consideration in scoring this PI.

State. As with Federal above. A score of 80 is awarded to each of the three State UoCs.

Audit Trace References

MSRA.

3.2	Fishery specific management system													
3.2.1	Fishery specific objectives		60					80				100		
	The fishery has clear, specific objectives designed to achieve the outcomes expressed by MSC’s Principles 1 and 2.		Objectives, which are broadly consistent with achieving the outcomes expressed by MSC’s Principles 1 and 2, are implicit within the fishery’s management system.					Short and long term objectives, which are consistent with achieving the outcomes expressed by MSC’s Principles 1 and 2, are explicit within the fishery’s management system.				Well defined and measurable short and long term objectives, which are demonstrably consistent with achieving the outcomes expressed by MSC’s Principles 1 and 2, are explicit within the fishery’s management system.		
Scoring Comments														
<p>Federal. The objectives of the Federal FMP are to: reduce fishing mortality to ensure that overfishing does not occur; promote compatible management regulations between state and Council jurisdictions and the US and Canada; promote uniform and effective enforcement of regulations; minimize regulations while achieving the management objectives stated above; manage the SD fishery so as to minimize the impact of the regulations on the prosecution of other fisheries, to the extent practicable; and contribute to the protection of biodiversity and ecosystem structure and function. In 2006, Framework Adjustment 1 allowed the specification of commercial quotas with a mechanism for specification of multi-year management measures. The objectives of subsequent amendments and adjustments is clear, i.e.; standardized bycatch reporting methodology.; flexibility in the process of defining and updating status determination criteria; management alternatives that specify mechanisms to set ABCs, ACLs, and accountability measures; and specific mechanisms to set ABCs and ACLs. Framework Amendment 3 will consider quota allocation, RSA provision, limited access, quota rollover provision, and EFH update.</p> <p>State. The objectives of the State FMP are to: reduce fishing mortality and rebuild the spawning stock biomass to prevent recruitment failure and support a more sustainable fishery; coordinate management activities between state, federal and Canadian waters to ensure complementary regulations throughout the species range; minimize the regulatory discards and bycatch of SD within state waters; allocate the available resource in biologically sustainable manner that is equitable to all the fishers; and obtain biological and fishery related data from state waters to improve the SD stock assessment that currently depends upon data from the federal bottom trawl survey. The objectives of subsequent addendums are clear i.e. the establishment of SD specifications for up to 5 years and the establishment of regional quotas. Draft Addendum 3 provides seven alternatives to allocate 42% of the annual quota to States from NY through NC through state-specific shares. Other measures include quota transfer, quota payback, and possession limit options.</p>														
	Score by UoC													
	FedGN	100	FedLL	100	FedTR	100	AFGN	100	AFLl	100	AFTR	100		
Rational														
<p>Federal. As the short and long term objectives are within the FMPs and subsequent documents they are explicit within the fishery management system. They are consistent</p>														

with the MSC principles and criteria. They are well defined and are measurable e.g. fishing mortality. Accordingly each Federal UoC is awarded 100 for this PI.

State. As the short and long term objectives are within the FMPs and subsequent documents they are explicit within the fishery management system. They are consistent with the MSC principles and criteria. They are well defined and are measurable e.g. fishing mortality. Accordingly each State UoC is awarded 100 for this PI.

Audit Trace References

State & Federal FMPs plus amendments and adjustments.

3.2.2	Decision-making processes	60	80	100
	<p>The fishery specific management system includes effective decision-making processes that result in measures and strategies to achieve the objectives.</p>	<p>There are <u>informal</u> decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.</p> <p>Decision-making processes respond to <u>serious issues</u> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take <u>some</u> account of the wider implications of decisions.</p>	<p>There are <u>established</u> decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.</p> <p>Decision-making processes respond to <u>serious and other important issues</u> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.</p> <p>Decision-making processes use the precautionary approach and are based on best available information.</p> <p><u>Explanations</u> are provided for any actions or lack of action associated with findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</p>	<p>There are <u>established</u> decision-making processes that result in measures and strategies to achieve the fishery-specific objectives.</p> <p>Decision-making processes respond to <u>all issues</u> identified in relevant research, monitoring, evaluation and consultation, in a transparent, timely and adaptive manner and take account of the wider implications of decisions.</p> <p>Decision-making processes use the precautionary approach and are based on best available information.</p> <p><u>Formal reporting</u> to all interested stakeholders describes how the management system responded to findings and relevant recommendations emerging from research, monitoring, evaluation and review activity.</p>

Scoring Comments

Federal

Within the MAMFC and NEFMC there are established decision making processes, through the Councils, advisory groups, teams and committees with the explicit need for public consultation. Membership of the councils extends to cross cutting issues with the USFWS and the coast guard. There is a specific committee for SD while others deal with such aspects as law enforcement, ecosystems, protected resources and research. Advisory Panels consist of recreational and commercial fishermen, charter boat operators, buyers, sellers, environmentalists and consumers who are knowledgeable about fishery issues. There are public meetings and written comments are allowed. All meetings are reported on the respective web sites. The output of this process is amendments to the fishery management framework as required and the definition of the annual management regulations. The use of the precautionary approach is implicit in the MSRA. One of the National Standards is that “*Conservation and management measures shall be based upon the best scientific information available*”. Formal reporting is required.

State

Within the ASMFC, each State is represented. The SDCSMB is generally responsible for carrying out all activities under the FMP. It is supported by a range of committees, teams and advisory panels. There is wide consultation of the public. A draft FMP, an amendment and its approval, and an emergency action require a minimum of four public hearings, including at least one in each state that specifically requests a hearing. Public comments are evaluated and considered prior to deciding what modifications will be made to the draft FMP or amendment, or draft final FMP or amendment, and prior to approval of the FMP or amendment. The use of the precautionary approach is implicit in the ACFMA. One of the standards is “*conservation programs and management measures shall be based on the best scientific information available*”. Formal reporting is required.

Score by UoC												
FedGN	90	FedLL	90	FedTR	90	AFGN	90	AFL	90	AFTR	90	

Rational

Federal

Decision making processes. The decision making processes are established and it is clear that they result in measures and strategies to achieve the fishery specific objectives. A score of 80 is awarded for this issue.

Issues. All issues identified are considered in the decision making process and where needed actions can be taken quickly, while in-season monitoring allows for changes in approach and related regulations. The process takes account of the consequences of decisions on management objectives for SD on the ecosystem, and of the impacts on those who depend on the fishery for their livelihoods. Given the various laws governing effort in the fishery it is considered that there are comprehensive holistic strategies. Accordingly, the fishery meets the second issue of SG100.

Use of precautionary approach. The use of the precautionary approach is implicit within the system. The information used as a basis for the decision making is the best available and may not be considered uncertain, unreliable or inadequate. The fishery meets the third issue of SG80.

Explanations and reporting. There is a high level of formal reporting that describes how the management system responded to findings and relevant recommendations

emerging from research, monitoring, evaluation and review activity. The fishery meets the fourth issue of SG100.

On that basis, the three Federal UoCs achieve a score of 90 for this PI.

State

Decision making processes. As Federal above.

Issues. As Federal above.

Use of precautionary approach. As Federal above

Explanations and reporting. As Federal above.

On that basis, the three State UoCs achieve a score of 90 for this PI.

Audit Trace References

State & Federal FMPs plus amendments and adjustments.

3.2.3	Compliance and enforcement	60	80	100
	Monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with.	<p>Monitoring, control and surveillance <u>mechanisms</u> exist, are implemented in the fishery under assessment and there is a reasonable expectation that they are effective.</p> <p>Sanctions to deal with non-compliance exist and there is some evidence that they are applied.</p> <p>Fishers are <u>generally thought</u> to comply with the management system for the fishery under assessment, including, when required, providing information of importance to the effective management of the fishery.</p>	<p>A monitoring, control and surveillance <u>system</u> has been implemented in the fishery under assessment and has demonstrated an ability to enforce relevant management measures, strategies and/or rules.</p> <p>Sanctions to deal with non-compliance exist, <u>are consistently applied</u> and thought to provide effective deterrence.</p> <p><u>Some evidence exists</u> to demonstrate fishers comply with the management system under assessment, including, when required, providing information of importance to the effective management of the fishery.</p> <p>There is no evidence of systematic non-compliance.</p>	<p>A <u>comprehensive</u> monitoring, control and surveillance system has been implemented in the fishery under assessment and has demonstrated a consistent ability to enforce relevant management measures, strategies and/or rules.</p> <p>Sanctions to deal with non-compliance exist, are consistently applied and <u>demonstrably</u> provide effective deterrence.</p> <p>There is a <u>high degree of confidence</u> that fishers comply with the management system under assessment, including, providing information of importance to the effective management of the fishery.</p> <p>There is no evidence of systematic non-compliance.</p>
Scoring Comments MCS covers SD along with other fisheries carried out in Federal and State waters and SD cannot be considered separately. The NOAA (2010) review of Federal enforcement found “ <i>systemic, nationwide issues adversely affecting NOAA’s ability to effectively carry out its mission of regulating the fishing industry. If not addressed by NOAA’s senior leadership, these issues have the potential to further strain the tenuous relationship that exists in the Northeast Region, and to become problematic in NOAA’s other regions. Fishing laws and regulations are highly complex, making compliance by those in the industry difficult even with the best of intentions</i> ”.				

One report concluded that “*weak enforcement combined with fishermen facing serious economic hardships are leading to widespread violations of fisheries regulations along the Northeastern United States coast. This pattern of noncompliance threatens the success of new fisheries management measures put in place to protect and restore fish stocks*”.

There is a comprehensive system of MSC. Violations of the regulations governing the harvest of SD appear to be rare. This is taken as an indication of two points; firstly the range of activities (observers, vessel trip reports and sales declarations) are an effective deterrent; and secondly, the value of SD is low and provides no incentive to run the risk of fines, loss of gear and loss of license. Evidence suggests that gill net fishermen do not comply with pinger requirements; apart from that there is no evidence that there is systematic non-compliance. Indeed fishermen argue that the potential sanctions for non-compliance in a low value fishery are not worth the risk. Sanctions for non-compliance do exist; however given the lack of violations it cannot be judged as to whether or not, by themselves, they are an effective deterrent.

As highlighted in NOAA (2010) there is “*a common industry perception that its civil penalty assessment process is arbitrary and unfair*”.

Score by UoC											
FedGN	60	FedLL	75	FedTR	75	AFGN	65	AFLI	70	AFTR	70

Rational

Federal

MCS System. Judging by the evidence, the MCS system implemented in US federal fisheries including that for SD has demonstrated an ability to enforce relevant management measures, strategies and/or rules. However due to the issues identified the enforcement ability cannot be considered consistent and the fishery achieves a score of 80 for the first issue.

Sanctions. There are sanctions for non-compliance and these are applied as appropriate, but there is no basis to consider that they demonstrably provide and effective deterrent. A score of 80 is allocated for this issue.

Compliance. Given the lack of actions, evidence suggests that fishers comply with the management system and they do provide information to support effective management. A score of 80 is allocated for this issue for trawl and long line. However, due to the potential issue with pingers the gill net fishery achieves 60.

Non-compliance. There is evidence of systematic non-compliance, and it cannot be assumed that the SD fishery is not part of the issue. The fishery does not meet the fourth issue of SG80.

The overall score for this PI for trawl and long line is 75; for gill net it is 60. *A condition is raised to the certification (Condition 15).*

State

MCS System. Judging by the evidence, an MCS system has been implemented in US state fisheries and surveillance mechanisms exist (log books and dealer reports), However the lack of observer coverage means that this fishery does not meet the first issue at SG80

Sanctions. There are sanctions for non-compliance and these are applied as appropriate, but there is no basis to consider that they demonstrably provide and effective deterrent. A score of 80 is allocated for this issue.

Compliance. Given the lack of actions, evidence suggests that fishers comply with the management system and they do provide information to support effective management. A score of 80 is allocated for this issue for trawl and long line. However, due to the potential issue with pingers the gill net fishery achieves 60.

Non-compliance. There is evidence of systematic non-compliance, and it cannot be assumed that the SD fishery is not part of the issue. The fishery does not meet the fourth issue of SG80.

The overall score for this PI for trawl and long line is 70; for gill net it is 65. *A condition is raised to the certification (Condition 16).*

Audit Trace References

NOAA (2010).

3.2.4	Research plan	60	80	100
	The fishery has a research plan that addresses the information needs of management.	<p><u>Research</u> is undertaken, as required, to achieve the objectives consistent with MSC's Principles 1 and 2.</p> <p>Research results are <u>available</u> to interested parties.</p>	<p>A <u>research plan</u> provides the management system with a strategic approach to research and <u>reliable and timely information</u> sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.</p> <p>Research results are <u>disseminated</u> to all interested parties in a <u>timely</u> fashion.</p>	<p>A <u>comprehensive research plan</u> provides the management system with a coherent and strategic approach to research across P1, P2 and P3, and <u>reliable and timely information</u> sufficient to achieve the objectives consistent with MSC's Principles 1 and 2.</p> <p>Research <u>plan</u> and results are <u>disseminated</u> to all interested parties in a <u>timely</u> fashion and are <u>widely and publicly available</u>.</p>

Scoring Comments

In considering the availability if a research plan one has to be aware that issues and activities that relate to specific P2 and P3 needs are not fishery specific, rather they cover a broad spectrum activities completed by a range of institutions, both in the public and private sectors. This research, for example specifically on SD and caught and discarded species is carried out by resource scientists according to a pre-agreed schedule. Other activities (covering ETP species, ecosystem and habitat) are more broad based and are used to inform the specific management needs of the various SD UoCs. The specific research plan is up-dated on a regular basis and is designed to assist a strategic approach to management.

The MSRA requires that each FMC, with the assistance of its SSC, develop a five-year research priority plan. To facilitate this process, the MAFMC examined the research needs which have been identified in numerous stock assessments, Council FMP/Amendment documents and through the Council's Research Set Aside Program. In addition, the NE portion of the NMFS Strategic Plan for Fisheries Research and the research needs list which formed the basis for proposed changes to marine recreational fisheries statistics in the US as part of the Marine Recreational Information Program were evaluated. The Council, in consultation with its SSC, identified the top research needs for each of its managed species based on documented research needs contained in the sources described above. In addition, the Council and SSC identified research needs common to all species which are of high priority to address future assessment and fishery management needs.

Collaborative fisheries research projects managed through the Northeast Cooperative Research Program are generated from several different sources These projects include research funded through our program contract competitions, projects led by the Northeast Fisheries Science Center, projects developed in response to the region's fishery Research Set-Aside programs, the Study Fleet, and Congressionally-directed cooperative research programs.

The Council, in coordination with NMFS and the Atlantic States Marine Fisheries Commission, may set aside up to 3 percent of the total allowable landings (TAL) in certain Mid-Atlantic fisheries to be used for research endeavors. The RSA program provides a mechanism to fund research and compensate vessel owners through the sale of fish harvested under the research quota.

AFMFC's Science Program works to ensure that the best scientific information available - biological, social and economic - is incorporated into the Commission's fishery management plans. The program provides a focal point for coordination and improvement of data collection, data management, stock assessment, and research activities among state and federal marine resource agencies, and universities on the Atlantic coast

The results of the research are widely disseminated

Score by UoC											
FedGN	100	FedLL	100	FedTR	100	AFGN	100	AFL	100	AFTR	100

Rational

There is a comprehensive research plan that provides fishery managers with the information required to manage the fishery taking into account issues related to principles 1 and 2. Thus the fisheries meet the first element of SG 100. The research plan and research is available to all interested parties in a timely fashion. On that basis, each UoC meets the second element of SG100. The overall score for all UoC is 100.

Audit Trace References

43 rd. SAW; Rago & Sossebee (various); ¹ http://www.spinydogfish.org/pb/wp_fc2785e3/wp_fc2785e3.html; MAFMC 2010b;

3.2.5	Monitoring and management performance evaluation There is a system for monitoring and evaluating the performance of the fishery-specific management system against its objectives. There is effective and timely review of the fishery-specific management system.	60	80				100																														
		The fishery has in place mechanisms to evaluate <u>some</u> parts of the management system and is subject to <u>occasional internal</u> review.	The fishery has in place mechanisms to evaluate <u>key</u> parts of the management system and is subject to <u>regular internal</u> and <u>occasional external</u> review.				The fishery has in place mechanisms to evaluate <u>all</u> parts of the management system and is subject to <u>regular internal</u> and <u>external</u> review.																														
Scoring Comments																																					
The AFMSC through the PRT and the work of the various Committees and advisory panels evaluates all parts of the management system on a continuous basis. Similarly, for the Federal fishery the SD Monitoring Committee reviews data in order to assess the effectiveness of management and the need to take additional measures. The established systems allows for in season review. Key resource analysis is reviewed externally, while the public consultation processes ensure that a wide range of stakeholders are able to comment on all parts of the management system.																																					
	<table><tr><td colspan="12">Score by UoC</td></tr><tr><td>FedGN</td><td>100</td><td>FedLL</td><td>100</td><td>FedTR</td><td>100</td><td>AFGN</td><td>100</td><td>AFL</td><td>100</td><td>AFTR</td><td>100</td></tr></table>												Score by UoC												FedGN	100	FedLL	100	FedTR	100	AFGN	100	AFL	100	AFTR	100	
Score by UoC																																					
FedGN	100	FedLL	100	FedTR	100	AFGN	100	AFL	100	AFTR	100																										
Rational																																					
Federal. As shown the fishery has in place mechanisms to evaluate all parts of the management system and is subject to regular internal and external review. A score of 100 is allocated for this PI to the 3 federal UoC.																																					
State. As Federal. A score of 100 is allocated for this PI to all three State UoC.																																					
Audit Trace References																																					
AFMSC 2002; Dogfish regulations, 2011																																					

Appendix 2: Peer Review Reports

Peer Reviewer 1

Overall Opinion

<i>Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?</i>	Yes
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Justification:

The assessment team has reasonably described the fishery in terms of MSC context and requirements, although I note below some PIs where more information is required. On occasion, I have suggested (with rationale) that the team reconsider individual PI scores applied which may or may not modify the overall score. I have also suggested slightly amended text for one set of conditions. Overall, I concur with the assessment team that the appropriate conclusion is to recommend the fishery described for MSC certification.

Audit Team Response:

Please see responses to individual issues below.

<i>Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?</i>	Yes
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Justification:

I agree that the conditions raised are achievable within the timeframe specified. However, I suggest some minor amendments (below) to the text to one set of conditions that make them more effective in achieving their intent. It is noted that the client action plan already indicates that my suggestion is to be undertaken, and so this is merely an exercise in formalization.

Audit Team:

We adopted this approach to differentiate between UoC in future annual audits and as such we have retained the conditions previously drafted. No change.

<i>Do you think the client action plan is sufficient to close the conditions raised?</i>	Yes
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Justification:

Key elements to meet the conditions are reflected in the Client Action Plan.

Audit Team Response:

No comment

General Comments on the Assessment Report (optional)

I raise comments on the main body of the report by section. I have not pointed out all typographical errors, but the main ones are mentioned below.

3.2.4 Stock mixing.

As noted in the report, the stock is exploited by both the US (the subject fishery of this certification) and Canada. Mixing rates between these two areas is uncertain, although 90% of the catch is currently taken in US waters. The report notes in this section that "managing the US component of the stock as a unit is appropriate. However, further work is required. [etc.]" This left me slightly concerned that the stock assessment and management of the stock considered the fishery within US waters only. While current US-only approaches appear sufficient to control exploitation and maintain the assessed component of the stock within biological limits at the current relatively low level of Canadian exploitation, the inter-governmental arrangements for assessment and management, and current US harvest strategy may or may not be sufficiently robust and reactive to any stock declines driven by exploitation outside the US area of control. Can the audit team expand on this within the report? Has the impact of this uncertainty on the assessment and harvest strategy been examined? Further, I note that an objective of the Federal (and State) FMP is to 'promote compatible management regulations...between the US and Canada' (PI 3.2.1 Scoring Commentary text). This issue is referred to elsewhere in the report. Although the level of concern varies somewhat: see also section 4.3, the last line in section 7 (which I suspect is missing a 'not'), the FMP text in section 4.1. of the report, and the rationale text in PI 1.2.3.

Audit Team Response:

The section on stock mixing has been rewritten to reflect the most recent findings of the scientific analyses, namely that fish in US waters are largely separate from fish in Canadian waters. Current estimate of annual mixing rate between the two stocks is 10% and thus treating the two as separate entities for management purposes is logical.

3.4.2 Federal vs. State waters

The figure referred to in the second paragraph appears to be incorrect.

Audit Team Response:

Figures 5 & 6 were not in the correct place; the report has been edited.

4.3 Assessment and stock status

Do the UoCs comprise 95% of the (US component of the) stock, or catch? In either case, is this for the US only or total (US+Canada)? If the latter, the subsequent logic needs clarifying.

Audit Team Response:

Changes have been made to the text to clarify that we are dealing with landings of the US Fish stock, the subject of this MSC evaluation. Thus, the UoCs comprise 98% of the landings of the US stock.

4.3.1 Data sources

The text mentions the observer programme provides information for the assessment by state, but the coverage and quality of this information is not currently discussed. What is the level of coverage within the fishery by state and UoC? I note the observer information is also used to support scores for Principle 2 (e.g. 2.3.3).

Audit Team Response:

Section 5.3.3. has been extended to cover the observer program.

4.3.3 Assessment model

I note in the SG text that catchability (q) in the trawl survey is assumed to be 1, i.e. all dogfish in the path of the trawl are considered to be caught by the net. While a common assumption has the uncertainty and potential bias in relative (or in this case absolute) biomass estimates resulting from this constant catchability assumption been examined within the assessment?

Audit Team Response:

The text has been altered to indicate that $q=1$ is a conservative approach in that it underestimates stock size if escapement occurs, which is highly likely, and is part of the conservative approach to management of this stock.

4.3.5 Management advice

I was initially confused by this section, since the first paragraph talks about the rebuilding phase of management (but the quoted text starts 'The current federal FMP'), while the subsequent section talks about the post-recovery plan. This could do with clarification for the reader.

Audit Team Response:

This is now section 4.3.6.

Clarifications have been made in the text to differentiate the original 1999 FMP from the present plan.

5.2.4 Long term objectives

It is noted that the precautionary approach is not explicitly noted, but 'the need to base measures on the best scientific information available would imply that if knowledge is weak, measures still need to be developed.' Are there any practical examples from this or other related fisheries to support this opinion?

Audit Team Response:

This is already covered in the report with MSRA requiring the precautionary approach.

5.3.3 Compliance and enforcement

Based on the previous text for the state monitoring I shared the concern over the lack of observer coverage and limited reporting requirements, and note the raising of a condition to address this.

Audit Team Response:

No comment

6.1.1 Atlantic Coast Marine Ecosystem

The NMFS Fish Stock Sustainability Index shows a 60% increase over the period 2000-2009. Does this measure have a 'target' level, and if so, how far away is the current level of stock status knowledge?

Audit Team Response:

The Fish Stock Sustainability Index is an overall measure of performance for 230 stocks according to their overfishing status and biomass levels. The maximum score possible is 920. We are not aware of any stated specific target.

6.1.5 Definition of the fishery

I note the issues in assigning information specifically to the Units of Certification, and agree with the raising of a condition to address these issues.

Audit Team Response:

No comment.

6.1.6 Species composition

Note that the first part of table 6 is labeled hook and line. Should this be longline? If not, is information for longlines available to justify the scores given later?

Audit Team Response:

See the clarification added as a footnote to the table in question.

6.4.2 Outcome

The section notes that the PBR for harbor porpoise is being exceeded by human-induced mortality ... while any impacts on local stocks of bottlenose dolphins are uncertain. However, there is no information on whether a high proportion of this interaction occurs within the units of certification, and hence whether the (e.g.) harbor porpoise take reduction plan is relevant and having the desired effect. This needs to be clarified given the scores assigned in PI 2.3.2 (noting the data problems and hence condition raised in 2.3.3). I realize that a fishery should only be 'scored down' for an issue under one PI, and this may be the reason for the scoring of PI 2.3.2. However, some better justification for the opinion that the fishery is not having an impact on the outcome is needed.

Audit Team Response:

The rationale was modified as required to clarify this point. Indeed, the issue is that a fishery should only be “scored down” for an issue under one PI and that the issue is captured as a condition in assessing the information (see condition in 2.3.3).

6.4.4 Information

How often are the Biological Opinions re-evaluated? When were the BOs for this fishery last developed?

The sentence "...which collects data on dead sea turtles, recues [sic] and rehabilitates love stranded sea turtles." could do with some attention!

The section notes that "a revised [loggerhead bycatch] estimate for gillnet gear is scheduled to be completed in 2010." Has this been completed, and if so what are the results of relevance?

Audit Team Response:

The Biological Opinion available to the team was from October 29, 2010. Information on the process is available from <http://www.fws.gov/midwest/endangered/section7/section7.html>

Sentence corrected

Not currently available; this will be reviewed after receipt of stakeholder comments.

6.5 Habitat

A map of the distribution of habitats and if available the pattern of fishing relative to those habitats would be useful. For example, is this available from the SASI? Are figures available on the proportion of pristine/impacted/protected/vulnerable habitats in the region?

Audit Team Response:

While maps of the distribution of habitats are available from the SASI (see for instance NEFMC 2010b), specific maps overlapping the pattern of fishing for SD are not available. Maps of distribution of habitats would add no value to the report unless they can be related directly to the SD fishery.

6.5.3 Information

Perhaps more appropriately in management, the authors note that the vulnerability assessment model 'could' also be used to support a criteria-based evaluation for defining MPAs. This implies that this has not been undertaken. Is it planned?

Audit Team Response:

While we mention that the model could be used to support a criteria-based evaluation for the definition of MPAs, the important point with respect to SD is that the analyses conducted so far had a focus on gears or gear types and have potential to provide insight on fishery-specific impacts. No changes to the draft are considered necessary.

6.6.2 Ecosystem outcome

The paper by Link *et al.* (2002) is used in the scoring comments text to justify the scores given. However it concentrates on the link between spiny dogfish and other commercially important groundfish species, but does not appear to examine the links with spiny dogfish, prey, and other trophic levels of the ecosystem. Are, for example, wider ecosystem models available for the region? E.g. from the work of the CAMEO project, GLOBEC, Ecopath, and the information in the 2009 NMFS Ecosystem Status Report, etc.? Any sources of information of the influence of SD on the wider ecosystem beyond groundfish should be considered to justify the scores given.

Audit Team Response:

The text and corresponding scoring table text were adjusted as necessary.

13.7 Conditions

I have the following suggestions for the conditions:

Conditions 1 to 4 - the condition focuses on the status of the retained species (specifically Atlantic cod) and the development of additional management measures where required. However, there is a need to monitor the effectiveness of any measures implemented and examine the options to develop further measures if required, which is not currently part of the condition. The Client Action Plan already notes this point in relation to audits 3 and 4.

Conditions 15 and 16 - The conditions note that by the first audit '... This will require regulatory measures put forth by state and federal agencies.' A query is whether regulatory measures can be realistically developed by those bodies within this timeframe?

Audit Team Response:

An additional milestone has been added to conditions 1 thru 4. This does not require any adjustment to the draft client action plan.

For clarification the wording has been changed.

Performance Indicator Review

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
1.1.1	Yes	Yes	NA	Justification: Audit Team Response: No comment
1.1.2	Yes	Yes	NA	Justification: Audit Team Response: No comment
1.1.3	Yes	Yes	NA	Justification: Audit Team Response: No comment
1.2.1	Yes	Yes	NA	Justification: Audit Team Response: No comment

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
1.2.2	No	No	NA	<p>Justification:</p> <p>From the available text, the actual HCR ("well-defined pre-agreed rules") that reduce exploitation rate as the limit is approached, is unclear. The original FMP was based on constant fishing mortality, which would reduce catches (but obviously not F!) as biomass declined toward the limit. However, the current rule on which the ABC/quota is based needs to be clarified here, as the current text does not indicate a harvest control rule, more a set of management goals.</p> <p>The issues of the HCR taking into account the main uncertainties has not been detailed within the rationale.</p> <p>I note that a recent MAFMC memo (SSC report 21-22 Sept 2011) includes items on ABC control rule MSE studies, and this document and reports should be considered to better justify the scores given.</p> <p>Audit Team Response:</p> <p>Recent documentation in the form of a 2011 MAFMC memo provides for a more explicit HCR as defined by the SSC. This has been added to the 1.2.2 Performance Indicator Rationale. Previously, HRC for SD was more implicit.</p> <p>How the main uncertainty, primarily the size of the adult population in the short to medium term as a result of a previous period of low recruitment, has been added to the rationale.</p> <p>That statement has been added to provide an explanation of HRC for SD.</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
1.2.3	Yes	Yes	NA	<p>Justification:</p> <p>Some mention of the justification for not considering Canadian catches should be given to address the third scoring element.</p> <p>Audit Team Response:</p> <p>Refer to Sect. 2.3.5 for the justification for not including Canadian catches. This MSC evaluation deals with the US Fishery on the US stock only. This is in line with the scientific findings on stock mixing and the manner in which SD are managed, as separate stocks off the USA and Canada. This has been referenced under 1.2.3 rationale.</p>
1.2.4	Yes	Yes	NA	<p>Justification:</p> <p>The scoring comment text refers to the MSC providing oversight. I suspect this is a typo?</p> <p>The rationale text of the second element seems to justify a score of 100, given that mention is made of the status relative to reference points being evaluated in a probabilistic way. Is the score of 80 based on the fact that the stochastic model is not the primary assessment approach? If so, this needs clarification.</p> <p>More information is needed on the testing of the assessment for robustness given there is no information on this within the scoring comments.</p> <p>Audit Team Response:</p> <p>This has been corrected to read SSC.</p> <p>After review, the score for the issue has been increased to 100 and this has led the score for the PI to be increased to 100 (from 95)</p> <p>We have redrafted to better explain the assessment approach in terms of the alternative approaches explored and the degree of review undertaken.</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
2.1.1	Yes	No	Yes	<p>Justification:</p> <p>The SG100 text refers to ALL retained species, rather than just the main species (SG80 text). Therefore to justify the scores of 100 given for longlines, the status and target reference points for all retained species must be covered. A score of 80 is justified based on the current information.</p> <p>Audit Team Response:</p> <p>Agreed: the score has been changed to 80.</p>
2.1.2	Yes	No	NA	<p>Justification:</p> <p>Again the SG100 text refers to strategies for ALL retained species, rather than just the main species (SG80 text). Therefore to justify the scores of 100 for elements for ALL gears (in particular for longlines), the appropriateness of the relevant management plans as a 'strategy' should be reviewed.</p> <p>Audit Team Response:</p> <p>Agreed. The rationale was amended to add a reference to the information available from various FMPs affecting the retained catch. The score was changed as appropriate.</p>
2.1.3	Yes	Maybe	Yes	<p>Justification:</p> <p>Again the SG100 text refers to ALL retained species, rather than just the main species (SG80 text). Based on the scores for the other gears, I suspect a score of 80 is more warranted (although the uncertainty over the labelling of Table 6 in the main text wrt longlines means I cannot be sure!)</p> <p>Audit Team Response:</p> <p>Agreed. The score and the supporting rationale were changed as appropriate.</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
2.2.1	Yes	No	NA	<p>Justification:</p> <p>SG100 refers to ALL, rather than the main, bycatch species. It is difficult from the very limited text provided to see whether a score greater than 80 is justified. Further information is needed to justify the scores of 100 for gillnets and longlines.</p> <p>Audit Team Response:</p> <p>Agreed. The score and the supporting rationale were amended as appropriate.</p>
2.2.2	Yes	No	NA	<p>Justification:</p> <p>Again, SG100 refers to ALL bycatch species. It is difficult from the very limited text provided to see whether a score greater than 80 is justified. Further information is needed to justify the scores of 100 for gillnets and longlines.</p> <p>Audit Team Response:</p> <p>Agreed. The rationale was amended to add a reference to the information available from various FMPs affecting the retained catch. The score was changed as appropriate.</p>
2.2.3	Yes	No	NA	<p>Justification:</p> <p>Again, SG100 refers to ALL bycatch species. It is difficult from the very limited text provided to see whether a score greater than 80 is justified. Further information is needed to justify the scores of 100 for gillnets and longlines.</p> <p>Audit Team Response:</p> <p>Agreed. The score and the supporting rationale were amended as appropriate.</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
2.3.1	Yes	No	NA	<p>Justification:</p> <p>For harbor porpoise the fact that the PBR is exceeded for this species, and that the UoC may contribute to this, means it seems difficult to identify whether the effects of the fishery are ...'highly likely to be within limits...'. More information and justification on how the HPTRP mitigates the PBR being exceeded is needed to justify the score. I note the uncertainty over the impacts of fisheries on localised populations of bottlenose dolphin, and an opinion on whether impacts are 'highly unlikely' the create unacceptable impacts on the population as a whole is desirable in the rationale.</p> <p>Audit Team Response:</p> <p>For harbor porpoise, the issue identified regarding the difficulty in identifying the effect of the SD fishery itself is already addressed as a condition under 2.3.3. With respect to bottlenose dolphin, the rationale notes that the conclusions are rooted "On ..the programs and plans in place". Also, the condition on 2.3.3 should help by providing direct information on the impact of the SD fishery itself.</p>
2.3.2	Yes	Maybe	NA	<p>Justification:</p> <p>The text provides examples of management strategies for gillnets specifically, but it is unclear whether these hold for ALL UoCs in both federal and State waters, and hence whether the consistent management strategy scores for all gears is warranted. This needs clarification in the text, and expansion where needed - for example, the sentence 'some regulations specify measures of restrictions (gear, area)...': does that apply to the three gears under certification?</p> <p>Audit Team Response:</p> <p>The text has been redrafted to clarify the points made..</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
2.3.3	Yes	Maybe	Yes	<p>Justification:</p> <p>The observer programme is cited as a source of information for ETP species. However, as noted earlier, the coverage by state and gear has not been presented, and hence the precision of this information to justify the scores for each UoC and state is not clear.</p> <p>Audit Team Response:</p> <p>The issue raised is already identified in the condition raised under this PI. Also, the information available must be seen in relation to the type of controls in place. A full score for meeting the first element of SG80 would have produced a score of 70. We gave 65 in recognition of the information collected requiring more analysis and interpretation</p>
2.4.1	Yes	Maybe	NA	<p>Justification:</p> <p>The scoring of the PI is based on plausible argument, as allowed by the FAM. However, the FAM also calls for 'about even balance of qualitative assessment/expert judgement and quantitative assessment.' I can agree that the use of longlines and gillnets is 'highly unlikely' to reduce habitat structure and function..., but I would prefer more evidence of this for bottom trawls. Does the work within the SASI model provide further justification?</p> <p>Audit Team Response:</p> <p>The arguments put forward are balanced and invoke the fact that bottom trawl is the only 5% of the reported landings of spiny dogfish in FY 2008, the observation that there were no issues with respect to fishery interactions with corals due to the type of substrate preferred by SD, the fact that SD is part of the epibenthic fauna, and that the risks of gear loss are minimized because of short soak times (regulated) for gillnets. This is supported by the BO on the Authorization of fisheries under the Spiny Dogfish Fishery Management Plan (NMFS 2010b). Accordingly, the Audit Team believes that the score allocated is warranted for all gear types.</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
2.4.2	Yes	Maybe	NA	<p>Justification:</p> <p>Given that two elements are scored at SG100, I would like to see additional information provided to justify the scoring, beyond general reference to the EFH and a framework to evaluate (and manage?) the impacts of fisheries on habitat. How does the EFH or other plans form a strategy (rather than partial strategy) for managing impacts, in particular for the UoC? e.g. are critical habitats protected by MPAs? Is the trawl footprint monitored and limited?</p> <p>Audit Team Response:</p> <p>Noted. Text modified as appropriate.</p>
2.4.3	Yes	Yes	NA	<p>Justification:</p> <p>Is VMS available to identify the distribution and movement of the UoCs, and is this used within SASI for point (3)? Does this apply at both the federal and state levels? Does the observer programme collect information on benthic impacts?</p> <p>Audit Team Response:</p> <p>We note that the reviewer considers that all the relevant information available has been used to score this indicator and that the rationale used supports the given score. We agree that the VMS, SASI and the observer programs could be used to generate additional information in support of habitat considerations.</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
2.5.1	No	Yes	NA	<p>Justification:</p> <p>As noted above, the Link et al. (2002) paper examines the ecological interactions between SD and other groundfish, but not higher and lower tropic levels. This scoring, while likely justified, needs further evidence to support it. In turn, maintaining SD around an MSY level is likely to ensure that the fishery is highly unlikely to disrupt key elements of the ecosystem.</p> <p>Audit Team Response:</p> <p>Agreed. The text was amended to reflect these points.</p>
2.5.2	Yes	Yes	NA	<p>Justification:</p> <p>Audit Team Response:</p> <p>No comment</p>
2.5.3	No	No	NA	<p>Justification:</p> <p>Better justification is needed for the SG100 scores given to the first three elements of this PI, which based on the information here and in the main text seems generous. Currently references are provided but a short summary of what they contain to justify the score is needed. In addition, Link et al. only deal with SD and groundfish, not the predators or prey, which I would consider to be further key elements of the ecosystem.</p> <p>Audit Team Response:</p> <p>Text amended to include food web/predator/prey aspects.</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
3.1.1	Yes	Yes	NA	Justification: Audit Team Response: No comment
3.1.2	Yes	Yes	NA	Justification: Audit Team Response: No comment
3.1.3	Yes	Yes	NA	Justification: Audit Team Response: No comment
3.1.4	Yes	Yes	NA	Justification: Audit Team Response: No comment

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
3.2.1	Yes	Yes	NA	<p>Justification:</p> <p>I note that the Federal and State FMPs both refer to promoting compatible management regulations between the US and Canada. Has this been successful?</p> <p>Are there no audit references for this PI?</p> <p>Audit Team Response:</p> <p>The small scale of Canadian effort and landing in this fishery limit the need for compatible management actions as does the indications that there may be two separate stocks.</p> <p>References have been added.</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
3.2.2	Yes	Yes	NA	<p>Justification:</p> <p>Identical scores are given for federal and state components. Are the processes and issues at federal and state level really identical? Given that there are some State to State decision making processes, how are they defined?</p> <p>Noting the potential lengthy time taken to respond to issues by management, are there any examples where emergency actions have been taken in the meantime to support the observations made?</p> <p>I note that the two elements scored at SG80 are equal to the SG text at 100. Given that the other elements were scored at the 100 level, the overall score may be closer to 100, unless the two elements scored at 80 have been specifically scored at that level (and if so the reasoning for that should be given).</p> <p>Note that scores are allotted in both the scoring comments and the rationale text.</p> <p>Audit Team Response:</p> <p>While they are not strictly identical, the output is the same in terms of providing effective decision-making processes that result in measures and strategies to achieve the objectives.</p> <p>In August 2000, the ASMFC Spiny Dogfish and Coastal Shark Board took emergency action to close state waters to commercial harvest, landings, and possession of spiny dogfish when federal waters were closed due to the fishery landing its quota. In 2001 the North Carolina Division of Marine Fisheries issued proclamations to close state waters to the harvest of spiny dogfish to remain in compliance with the ASMFC emergency action.</p> <p>Two of the issues are duplicated between SG80 and SG100.</p> <p>The draft has been amended</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
3.2.3	Yes	Yes	Yes	Justification: Audit Team Response: No comment
3.2.4	No	No	NA	Justification: There is a very brief scoring comment, which provides no summary of the research plan elements (nor ref to 5.3.4 of the main text), its 'timeliness', or the dissemination process (which is not discussed in section 5.3.4; is it on the web, for example?) Who is undertaking the research, and how is the research strategy planned and by whom? Does the research cover elements of P1, P2 AND P3, as required to justify the score of 100 given for the first element? While section 5.3.4 details areas for P1 and P2, research for P3 does not appear in the list provided. If the results of research are 'widely disseminated', is this to the public? If supported by further information on dissemination mechanisms, a score of 100, rather than 80, might be justified for this element? There are no audit references provided for this PI. The english in this section (in particular the first sentence of the rationale) needs review. Audit Team Response: Text has been redrafted. The public has access to the research. The PI has been rescored. Audit references added. The draft has been corrected.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
3.2.5	Yes	Maybe	NA	<p>Justification:</p> <p>To justify the score of 100 given at the State level, what are the processes for regular internal and external review of ALL parts of the management system? Are external reviews invited at both federal and state level?</p> <p>Audit Team Response:</p> <p>All parts of the management system are subject to external review.</p>

Peer Reviewer 2

Overall Opinion

<i>Has the assessment team arrived at an appropriate conclusion based on the evidence presented in the assessment report?</i>	Yes
<p>Justification:</p> <p>Apart from a couple of scoring indicators, where there is either inadequate evidence presented or the score needs reconsidering, the evidence presented in this assessment report supports the conclusions reached by the assessment team. In view of the previous parlous state of the NW Atlantic spiny dogfish population, it is encouraging to see that a well-informed stock assessment demonstrates that the management measures in place have affected a good recovery.</p> <p>Audit Team Response:</p> <p>No comment.</p>	
<i>Do you think the condition(s) raised are appropriately written to achieve the SG80 outcome within the specified timeframe?</i>	Yes
<p>Justification:</p> <p>The conditions are appropriate for the 4 weaknesses identified in the MSC assessment, though it would help readers enormously if the 16 were summarized more across UoCs, especially for the common condition on ETP species monitoring (2.3.3) that applies to all 6 UoCs.</p> <p>A possible reduction in the score against 1.2.2 Design and selection of Harvest Control Rules may require an additional condition.</p> <p>Audit Team Response:</p> <p>The authors consider that for the purpose of monitoring it is better to maintain the conditions as presented. See comment on 1.2.2 regarding a new condition.</p>	
<i>Do you think the client action plan is sufficient to close the conditions raised?</i>	Yes
<p>Justification:</p> <p>The client action plan appears sufficient to raise the relevant scores to at least SG80 within the specified time frame.</p> <p>Audit Team Response:</p> <p>No comment.</p>	

General Comments on the Assessment Report

This report provides a comprehensive, if exhaustive, account of the information used to score the MSC assessment that, in general, supports the scores given. Apart from a specialist readership, however, the detailed presentation in the body of the report (which includes many direct extracts from sources) is a daunting read and it would benefit from less repetition and more synthesis of the necessary evidence, in particular omitting anything that is not relevant to recent stock status or current management of spiny dogfish. For example, at 6.2.2 Management (of main retained species), Atlantic cod, it is unnecessary (and lazy) to include only an extract from NEFMC (2011), which leaves the reader to try to figure out the relevant information and what it implies. This is a particular problem in section 6.4, ETP species, where the reader is left far too much on their own to try to understand the salient issues and facts from a mass of repetitive and often unintelligible text. Comments in the Scoring Table are much more succinct, as they should be, though there are missing words and repetition that needs some attention.

Audit Team Response:

The report has been proof read, and amended as required. The text for cod has been amended substantially; however for ETP species we do not agree to paraphrase the text that was carefully crafted by the assessment teams of the various species. We regard some of the points made by the peer reviewer relate to style and not the substantive issues related to the certification.

Specific comments

Executive Summary: it is of no consequence to this assessment that 24 UoCs were initially considered in the main assessment, and please ensure that any remaining references to the 24 are deleted (e.g. sentence above Figure 20). **Glossary of acronyms:** to avoid confusion, use the conventional symbol for metric tons (t), rather than Mt or mt. Also, it may be unavoidable to use imperial units (lbs) for an American audience in parts of the report, but please always include the metric (t or kg) equivalent. Consistency is required in using scientific (Latin) names for species, preferably the first time a species is mentioned.

Audit Team Response:

The authors consider that it is relevant to the assessment in order to be precise and inform the readers of the justified change in approach. The text has been proof read to identify where required changes have not been made.

Given the continued use of imperial measures in the U.S. we prefer to clearly distinguish between short tons and metric tonnes. See acronyms. .

Style – not a substantive comment.

3.1 History of the fishery. Final 2 paras: given that SD was deemed to meet the requirements for CITES Appendix II listing in 2004, though not subsequently included, and the NW Atlantic population was listed by the IUCN as endangered in 2006, some comment is required here explaining why the North American SD fishery persists and assuring readers that these do not undermine MSC's sustainability status.

Audit Team Response:

Spiny dogfish was not listed in CITES and is therefore not relevant. This report relates to the species meeting MSC principles and criteria. At the same time the text has been clarified. The analysis is sufficient to emphasize why the U.S. SD fishery persists and why certification would not undermine MSC's sustainability status. At

this point it is worthwhile pointing out that the certification of SD has been completed in relation to how it meets the MSC standard; it is not the role of the auditors to decide whether or not elasmobranchs (or indeed other species) have special characteristics that prevent its certification whether or not the fishery meets that standard.

3.3 Gear: in order to understand how the fishery that accounts for the majority of SD landings operates and interacts with the environment, it is necessary to be much more precise in these gear descriptions than just presenting extracts from general accounts of trawls, gill nets and long lines. Was there no specific information obtained from the client fisheries, especially as “96% of the landings were taken from SD targeted fisheries in 2009”?

Audit Team Response:

The exact configuration of gear varies from vessel to vessel. The authors consider that the information presented provides the basis for assessing the nature of the possible interactions of the various gears with the environment.

3.4.1 Landings by State: would benefit from a figure showing state boundaries and sea areas named in the text. Also, a summary of annual total US landings, by UoC, is required.

Table 2: what does 0.25 >200 kg 0 <200 kg signify?

Audit Team Response:

The information included is considered sufficient.

This has been clarified in the caption.

3.4.5 Discards: you state that estimated dead SD discards have averaged 5,473 t since 2000 (and Fig. 7), when the proportion discarded has averaged 52% (generally the smaller fish) and landings averaged some 5-6,000 t. This high wastage must be reflected in the assessment scores.

Audit Team Response:

This level of discards, although substantial, is fully accounted for in the assessment and management (sustainability) of the species. Thus, discard mortality is accounted for. Some portion of discards survives and this has been examined in several studies. Rago and Sosebee (2010) state; “Spiny dogfish are hardy fish and experimental evidence suggests that many survive capture. Estimated survival rates by gear type were applied to discards summarized in Table 6.”

3.2.4 Stock Mixing – US / Canada: it is implied here that SD in US waters comprise one stock that is largely separate from SD off Canada but, at 4.3.3 The assessment model, the NW Atlantic SD stock is considered to be composed of two (US and Canada) components, which may or may not interact spatially but are dealt with in a single population model (though note that Canadian landings since 1980 have constituted an average of 6% of total reported SD landings). This interpretation is upheld in 4.1 Stock, which repeats much of the foregoing information on stock identity without adding clarity. To be unambiguous, the first sentence in 4.3. Assessment and stock status, would read better as “In assessing and managing NW Atlantic SD, it is treated as a single stock in US and Canadian waters, and can therefore be considered as a single unit for the assessment in the certification process”. And see comments against 1.2.3 in Scoring Table.

Audit Team Response:

The section 3.2.4 on stock mixing has been rewritten to better reflect the separation between fish in USA waters and fish in Canadian waters. It is on this basis that US fish are appropriately managed separately from Canadian fish as they are considered to be separate stocks based on identified migration patterns. A paragraph has

been placed in Sect.4.3 that explains that although the original assessment in 2010 was done at TRAC, the US derived its own BRPs for the US fish and those are used as the basis for managing the US fish which are the subject of this MSC. Rago and Sosebee state: “At present, the utility of the revised reference points herein is restricted to management processes in the US only” and that is how the US fish are managed.

The statement “In assessing and managing NW Atlantic SD, it is treated as a single stock in U.S. and Canadian waters, and can therefore be considered as a single unit for the assessment in the certification process” is incorrect. U.S. SD is presently managed separately from Canadian fish in spite of the first attempt in 2010 to co-assess stock status at TRAC.

4.3.3 Assessment model: you discuss at length two models, neither of which was accepted by the TRAC due to unacceptable levels of uncertainty in the model outputs, noting that neither model produced satisfactory fits to times series of relative abundance estimates from the research surveys and that the results of both models appeared to be strongly influenced by initial starting conditions. You then briefly mention that a size- and sex-structured equilibrium life history model is used to estimate yield per recruit and female pups per recruit corresponding to various levels of F and the minimum size at entry to the fishery, and that a stochastic, length-based projection model is used to predict yield, population sizes and rebuilding times under alternative management scenarios. If either or both of these are used to set BRPs and assess SD stock status, why are they given so little regard compared to the discarded models?

Audit Team Response:

The size- and sex-structured equilibrium life history and the stochastic, length-based projection mode were used to derive BRPs and this is the focus in the text. This aspect of the assessment was used to derive BRPs for U.S. fish and subsequent management measures that guide the exploitation of that stock. The text on the rejected TRAC joint models has been redrafted and reduced.

4.3.4 Assessment results: you state that, from 1997 to 2003, pup production was a record low, but has subsequently improved and recent recruitment has been moderate. According to Figure 14, with the exception of 2004 and 2009, recruitment still appears to have been well below the long-term average. A female SSB-recruitment plot would be instructive here (and is relevant to estimating BRP), though the recruit-per-spawner plot suggests a long-term decline. Incidentally, the ratio female catch/female exploitable biomass is more conventionally defined as exploitation rate, and is not the usual instantaneous fishing mortality (F), which is estimated from the “catch equation” $C_t = N_0 F / Z (1 - e^{-Zt})$ that incorporates a value for natural mortality (M).

Audit Team Response:

Pup production has improved and in 2009 was particularly high. SD seems to undergo pulse recruitment and the occasional big years tend to sustain the population. That the present (2004 - 2009) recruitment is below the long term mean is to be expected because the SSB has been lower than historic levels. The species was fished to low levels in the 1990s but is presently recovering and now is significantly higher than in 1999. Both SSB and recruitment have improved. A SSB/recruitment plot would illustrate if females are producing fewer, more or about the same number of pups per female but it is unclear how that would affect the assessment results. Stock recruitment relationships are available in Rago & Sosebee as they were part of the analysis in deriving BRPs.

Productivity: you note that the low abundance of pups during 1997-2003 is expected to result in reduced spawning biomass, but then say that “short term increases in stock size will continue for several more years until the effects of reduced SSB alleviates.” What does this mean? Also, that “the skewed sex ratio may have implications for decreased reproductive output, but direct evidence for this effect is lacking as recruitment has increased considerably in recent years”. Has it, in relation to the long-term average?

Audit Team Response:

The text has been redrafted to ensure clarity. Recruitment has increased in recent year. That is may be lower than the long term mean is not relevant – it has increased and this will likely have a positive effect on SSB in the future. That recruitment at present is lower than in the past (pre 1990) is to be expected because SSB is now lower than during that period.

Special Considerations: though the overall population biomass of SD (male, females and juveniles) is currently relatively high, at around 500,000 mt, the stock status in relation to BRPs is determined against female SSB, and stock trends should be emphasized in this context.

Audit Team Response:

BRPs are determined against female SSB and SSB trend is an integral part of the assessment. SSB has been increasing at a substantial rate for a number of years, as clearly illustrated in Figure 12.

6.2 Retained by catch: is not concerned with discards (unless main retained species have a significant discard component), and discussion of the monitoring of discards under 6.2.3 Information is probably better placed under 6.3 Discards, the better to clarify the distinction between retained and discarded by catch as required by MSC.

Audit Team Response:

The text was amended to avoid confusion.

6.3.1 Context: it is curious that sea birds are categorized as discards, when all other MSC assessments I have seen (40+) deal with fish or shellfish here. Also, there appears to be no hard information on current levels of by catch in the SD fishery (even in the past it is mainly anecdotal). If the relevant species' populations were threatened or endangered (SC = “species of concern?”), one would expect them to be dealt with under ETP species (with some estimate of the significance of mortality due to the SD fishery, as for common loon).

Audit Team Response:

Agreed. As the relevant species are considered Species of Concern by the Wildlife Service, the relevant information on sea birds was moved to the ETP Section. The Characterization table was adjusted accordingly, together with the relevant scoring tables.

7. Other fisheries: if Canadian fishing effort has realized average annual landings of around 2,500 t since 2000, and these represent 6% of the total from the NW Atlantic stock, the US catch would be around 40,000 t. This is clearly not the case. Although Canadian catches appear to be taken from the same assessment unit as US SD, if fish are largely separate with about 10% annual mixing, how can Canadian removals significantly affect the US component?



Audit Team Response:

Canadian removals do not significantly affect the US component since mixing between the two components is limited to about 10% annually. The assumption above, that SD off Canada and US are managed as a single stock, is incorrect. Best available knowledge indicates that SD form 2 stocks US and Canada continues to manage its own stock separately. This has been further clarified in the text.

Performance Indicator Review

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
1.1.1	Yes	Yes	NA	Justification: The first para portrays a more positive picture ref. female SSB and B_{TARGET} in the next few years than do the comments under Rationale, and should be tempered somewhat (projections do not indicate that SSB will remain above or near B_{TARGET} at the present level of exploitation). A score of 80, however, appears correct. Audit Team Response: Wording has been altered to better reflect the projections.
1.1.2	Yes	Yes	NA	Justification: In order to avoid confusion, omit any discussion of BRPs that have been superseded or found to be unrealistic, and therefore discounted. Audit Team Response: <i>The authors consider it important that there is a full understanding of how BRPs evolved.</i>
1.1.3	Yes	Yes	NA	Justification: How has a “change in availability” (to the fishery?) since 1999 enabled the stock size to increase? Audit Team Response: The text has been revised.

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
1.2.1	Yes	Yes	NA	Justification: Audit Team Response: No comment
1.2.2	Yes	No	No	Justification: Under Design and selection of Harvest Control Rules you note that it is not clear if there is a mechanism in place to reduce exploitation if the limit reference point is approached in future. Therefore, the first element of SG80 is not satisfied and the score should be <80 (plus a condition). It might also be pertinent here to point out the very high discard mortality of SD in the UoCs, and the implications for scoring. Audit Team Response: There is a mechanism in place to reduce exploitation and the text has been clarified. Refer to Sect. 4.3.6 and PI 1.2.2 "Applying this P* to the OFL produces an ABC...."

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
1.2.3	Yes	No	NA	<p>Justification:</p> <p>My understanding from the main text is that the mixed stock in Canadian and USA SD waters is assessed as a single unit, so this is not an issue.</p> <p>Although age data are not collected, SD are difficult to age and assessments are length based.</p> <p>A score of 80 appears too low.</p> <p>Audit Team Response:</p> <p>The text more explicitly states that SD in US waters forms a stock largely separate from Canadian SD. TRAC (2010) is the first time that US and Canadian scientists did a joint assessment. However, the US requirement for BRPs obliged that a subsequent US only assessment be done and that assessment forms the basis for management of US SD.</p> <p>Agreed. A length based assessment is adequate to assess status, produce BRPs and derive HCRs.</p> <p>The audit team feels that 80 is an appropriate score as there are some uncertainties and data gaps in the available data as specified in the comments and rationale.</p>
1.2.4	Yes	No	NA	<p>Justification:</p> <p>In the main text of the report, at 4.3.3 Assessment model, there is too little information presented about the model currently used (though you discuss at length two models which were not accepted by the TRAC) to judge whether it really does merit the high mark given (95)</p> <p>Audit Team Response:</p> <p>This section has been redrafted to better explain the US assessment.</p>

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
2.1.1 Retained species stock status	Yes	Yes	Yes	Justification: Audit Team Response: No comment
2.1.2 Management Strategy	Yes	Yes	NA	Justification: Audit Team Response: No comment
2.1.3 Information and monitoring	Yes	Yes	Yes	Justification: Audit Team Response: No comment
2.2.1	Yes.	Yes	NA	Justification: Audit Team Response: No comment
2.2.2	Yes	Yes	NA	Justification: Audit Team Response: No comment

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
2.2.3	Yes	Yes	NA	Justification: Audit Team Response: No comment
2.3.1 ETP Species, Status	Yes	No	NA	Justification: Given the sensitivity of fisheries encounters for all the named species, a lack of accurate catch data for the UoCs (see 2.3.3), and the requirement to score for ETP species (and by catch) against the most vulnerable species, a score of 80 is indicated here, as awarded for NA right whale, humpback whale, loggerhead turtle, harbour porpoise and bottlenose dolphin (and reflected in the emphasis under 2.3.2 Management strategy). Audit Team Response: Agreed. The PI has been rescored to 80 given the requirement to score the ETP species against the most vulnerable species.
2.3.2	Yes	Yes	NA	Justification: Audit Team Response: No comment

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
2.3.3	Yes	Yes	Yes	Justification: The low score awarded against the lack of information collected to support the management of fishery impacts on ETP species supports the above comments. Audit Team Response: No comment
2.4.1	Yes	Yes	NA	Justification: Audit Team Response: No comment
2.4.2	Yes	Yes	NA	Justification: Audit Team Response: No comment
2.4.3	Yes	Yes	NA	Justification: Audit Team Response: No comment
2.5.1	Yes	Yes	NA	Justification: Audit Team Response: No comment

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
2.5.2	Yes	Yes	NA	Justification: Audit Team Response: No comment
2.5.3	Yes	Yes	NA	Justification: Audit Team Response: No comment
3.1.1	Yes	Yes	NA	Justification: Audit Team Response: No comment
3.1.2	No	Yes	NA	Justification: Audit Team Response: No comment

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
3.1.3	No	No	NA	Justification: SG80 requires that clear long-term objectives that guide decision-making, consistent with MSC Principles and Criteria and the precautionary approach, are <u>explicit</u> within management policy. The comments suggest that these are not explicit within Federal standards, and do not support the high score given. ASMFC policy appears to be more clearly defined. Audit Team Response: <i>De facto</i> the precautionary approach is explicit in the MSRA, even though the term is not explicitly mentioned.
3.1.4	Yes	Yes	NA	Justification: Audit Team Response: No comment
3.2.1	No	Yes	NA	Justification: Audit Team Response: No comment
3.2.2	Yes	Yes	NA	Justification: Audit Team Response: No comment

Performance Indicator	Has all the relevant information available been used to score this Indicator? (Yes/No)	Does the information and/or rationale used to score this Indicator support the given score? (Yes/No)	Will the condition(s) raised improve the fishery's performance to the SG80 level? (Yes/No/NA)	Justification Please support your answers by referring to specific scoring issues and any relevant documentation where possible.
3.2.3	Yes	No	Yes	Justification: You suggest that it cannot be assumed that systematic non-compliance does not apply to the SD fishery, but the strong recovery of NW Atlantic SD since 1999 does suggest that the fishery has been controlled effectively. Audit Team Response: The point is that it appears that compliance has been achieved due to regulations(catch limits) and market factors (low price) that reduce the incentive to not respect regulations. The need is to ensure that control is effective when/ if market conditions change. On that basis we must refer to the identified weaknesses in the MCS system on the east coast.
3.2.4	Yes	Yes	NA	Justification: Audit Team Response: No comment
3.2.5	Yes	Yes	NA	Justification: Audit Team Response: No comment

Appendix 3: Auditor Response to Stakeholder Written Submissions Received Prior to Posting of the PCDR

The auditors received three written submissions from stakeholders in the period prior to the preparation of the client draft report. All the comments made were taken as a guide as to where specific attention should be focussed. Although, it may not be explicit in the text of the main report, stakeholder views have been fully taken into account in drafting the report. Our brief explicit responses are given below.

The Humane Society of the United States

In assessing the fishery in relation to ETP species, the biological opinions and related potential biological removal levels have been fully taken into account (section 6.4). There is specific analysis covering harbour porpoise, bottle nose dolphin, hump back whales and right whales and other ETP species, covering the interaction of the three gear types with them over the whole Federal and State fishery.

Our assessment indicates that information (PI 2.3.3) on the interaction between all UoC and ETP species does not meet the MSC standard and this has led to conditions on the recommended certification.

We welcome any evidence based comments that would show that the conclusions that we have reached about the fishery in relation to the MSC standard are erroneous.

Shark Advocates International

Page 1

We consider that the 16 bullet points have been examined in the main text of the report that has been used as a basis for the scoring of the fishery against the MSC standard.

Inherent Vulnerability

In our view the evidence shows that the stock assessment, harvest strategy and related harvest control rules and tools fully take into account the inherent vulnerability of the species; this would not have been the conclusion in the past.

Biomass

Stock assessments and stock status as well as issue related to the possible trans-boundary nature of the stock are fully covered in the main body of the text that has been used as a basis for scoring the fishery against MSC Principle 1 performance indicators.

Recruitment

This is explicitly covered in the main body of the text that has been used as a basis for scoring the fishery against MSC Principle 1 performance indicators.

Size Structure

This is explicitly covered in the main body of the text that has been used as a basis for scoring the fishery against MSC Principle 1 performance indicators.

Sex Ratio

This is explicitly covered in the main body of the text that has been used as a basis for scoring the fishery against MSC Principle 1 performance indicators. Evidence indicates that uncertainty is taken account and the approach is precautionary.

Limit & Reference Points.

This is explicitly covered in the main body of the text that has been used as a basis for scoring the fishery against MSC Principle 1 performance indicators. We consider that the fisheries meet the issues related to SG80 of PI 1.1.2 (reference points).

Additional Uncertainty

This is explicitly covered in the main body of the text that has been used as a basis for scoring the fishery against MSC Principle 1 performance indicators. See PI 1.2.4.

Impacts on the Ecosystem

By Catch

Each of the species noted is covered in section 6 of the report and considered under the performance indicators related to 2.1, 2.2 & 2.3. An issue that has arisen recently is the listing of Atlantic Sturgeon as endangered. In our opinion, it would not be reasonable to consider issues related to this under 2.3. However, should the fishery be certified, future annual audits would be required to assess the implementation of required measures as implied by the listing.

Habitat

This is explicitly covered in the main body of the text that has been used as a basis for scoring the fishery against MSC Principle 1 performance indicators.

Reliability of the Management System

The issue of the shared stock or otherwise is covered in the report. We acknowledge the list of past issues with the management of the species. If the fishery was to be certified, the required annual audits will assess if the management authorities are meeting their obligations in terms of maintaining the sustainability of the stock by responding appropriately to scientific advice. We would note that there is a recent example of a fishery certification (Portuguese sardine) being suspended for this very reason.

Conclusion

This is largely a point of view and supposition of possible future actions. If the fishery is certified annual audits will monitor the situation and if there is a change of situation (even if the milestones for conditions are being met) this could lead to the suspension and potential withdrawal of the certificate.

We welcome any evidence based comments that would show that the conclusions that we have reached about the fishery in relation to the MSC standard are erroneous.

Hailife

Page 1:

No comment

Page 2:

Para.1. This assessment is out-of-date.

Para. 2. The last sentence needs to be supported by evidence related to the fishery under assessment.

Para. 3. A point of view that is not supported by evidence.

Para 4. A point of view based on supposition.

Para 5. A point of view

Comment 2.1

Sections 3 & 4 of the report provide detailed background on the biology of the species, the stock assessment and stock status. With evidence available we have scored the fishery against the MSC standard. In our opinion it has been clearly demonstrated that the stock has recovered; if in the opinion of a stakeholder this is not the case then evidence should be provided that the auditors may take this into account. It is not clear why Hailife considers that in relation to Spiny dogfish Principle 1 would be impinged.

Comment 2.2

The points made on sex ratio and fecundity have been taken into account in the assessments and by the audit team.

Comment 2.3

The analysis is out-of-date. Gill nets are the main gear. The impacts of the various gears on habitat structure and function are covered in section 6.5 of the report and the scores for PIs 2.4.1, 2.4.2 and 2.4.3 have been made on the basis of the available evidence. The impacts of the various gears on ETP species are covered in section 6.4 of the report and the scores for PIs 2.3.1, 2.3.2 and 2.3.3 have been made on the basis of the available evidence.

Comment 2.4

We audit the fishery against the MSC standard; any issues relating to that standard should be raised with MSC.

Comment 2.5

We note that there does not appear to be a comment 2.5.

Comment 2.6

We acknowledge past problems in the management of the fishery that led to depletion of the stock. In the future, if the fishery is certified there would be annual audits that would identify if there was non-compliance and if considered serious enough this could lead to suspension of the certificate. Section 5 which underpins the scoring for the scoring of P3 PIs covers the overarching management system and its capacity to maintain sustainability as assessed under P1 and P2. The issue of a shared stock with Canada is fully covered in the report.

Comment 3

The assessment audits the specific fishery against the MSC standards; if a fishery is considered sustainable it cannot be taken to imply that other fisheries for similar fisheries are also sustainable. We do not consider the scientific evidence to be weak. We have no comment on the CITES process.

Addendum

The fishery is audited against the MSC standard for sustainable fisheries. This does not include consideration of the issue raised.

We welcome any evidence based comments that would show that the conclusions that we have reached about the fishery in relation to the MSC standard are erroneous.



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25 February 2011

Dear Ian,

Thank you for the opportunity to comment on the spiny dogfish fishery seeking "sustainable" fishery status under the aegis of the Marine Stewardship Council. The Humane Society of the United States (The HSUS) would vehemently oppose this.

We provided some comments to this effect in July of 2009 that stated our concerns for the target species. In these comments today, I focus primarily on my concern that nets set for and/or of the same type set for spiny dogfish have resulted in unmitigated, and often unsustainable levels of bycatch of Endangered Species Act (ESA) listed humpback whales and other cetacean species as well, including Marine Mammal Protection Act (MMPA) depleted stocks of coastal bottlenose dolphins. Regardless of concerns for the sustainability of the catch of the target species (and I believe there are reasons for concern as we stated in our 2009 comments), the unmitigated bycatch of ESA listed and MMPA depleted cetaceans should preclude the certification of this fishery as sustainable.

Each year, the National Marine Fisheries Service (NMFS) publishes stock assessments for all marine mammal stocks in the U.S. These stock assessment reports detail the status of the stock and fisheries-related mortality. To determine the sustainability of the anthropogenic mortality the NMFS calculates a Potential Biological Removal (PBR) level for each stock. The MMPA defines PBR to be the "maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population."

In the NMFS stock assessments, the target species of the net responsible for mortalities that are attributed to gillnets (e.g., multi-species groundfish or dogfish) is generally not specified (or is unknown). In the reports of the cetacean mortalities and serious injuries (as well as entanglements in general), the net is often simply stated to be gillnet, but the location and timing of the mortalities often coincides with that of fishing effort for dogfish and in any case, the nets are generally identical regardless of the target.

In the case of humpback whales, the gillnet-related mortality exceeds the MMPA's PBR level for humpbacks. These takes are largely unmitigated. That is, though nets are required to be configured with "weak links" that are intended to facilitate the nets breaking and releasing the whale un-entangled or at least unharmed, whales are still entangled and dying in them.

Comments of the HSUS on MSC Consideration of the Spiny Dogfish Fishery

Restrictions on the timing of fishery effort (time-area closures) and required use of gear modifications have reduced some of the mortality sustained by bottlenose dolphins and harbor porpoise but levels are still excessive. I discuss each below.

Harbor porpoise

The most recent stock assessment for harbor porpoise states that the PBR is 703 for this stock that ranges from the Bay of Fundy through the U.S. mid-Atlantic and is seasonally migratory (NMFS 2009 final, 2010 draft). These porpoises spend the summer months in the more northerly part of their range and winter toward the southern portions. As noted earlier, the stock assessments provide fishery information based on the NMFS classification of the fishery, which is by gear characteristics, not by target species. Harbor porpoises are caught and killed in Canada, in the northeast sink gillnet fishery and in the mid-Atlantic sink gillnet fishery (again NMFS classifies by gear characteristic, not target species).

Canada no longer places fishery observers on its vessels, so the magnitude of bycatch of this stock is not well understood. As of 2002, the last year when observers were aboard Canadian vessels, the average annual bycatch was 42 porpoises. For U.S. fisheries, the Northeast sink gillnet fleet (which targets dogfish, among other species, as per the appendix in NOAA 2009) the mortality of porpoises annually was 654, 630, 514, 395 and 666 for the years 2004-2008 respectively. For these same years, the mid-Atlantic gillnet fishery (which targets dogfish, among other species, *ibid* NOAA 2009) had an additional bycatch of harbor porpoise that was 137, 470, 511, 58 and 350 respectively. Thus, for the year 2008 (the most recent year for which finalized data were available), the total U.S. gillnet mortality was 1016 against the PBR's calculation of a sustainable level of 703. This is excessive and not sustainable.

The NMFS re-convened the MMPA-mandate take reduction team in 2009 to examine causes of this unsustainable mortality and recommend mitigation. The HSUS is an appointed member of that team. We were told in the meeting that shifts in effort (including that of vessels targeting dogfish) and widespread disregard of the mandate to use acoustic "pingers" to avoid bycatch were responsible for the increases in harbor porpoise mortality over that of earlier years when compliance had been higher. The team recommended additional areas in which acoustic pingers would be required and a complete closure of these areas on a seasonal basis if, after 3 years, compliance was poor and mortalities did not decline during those years. The requirements went into effect in March of 2010. As of February 2011, NMFS staff reported to the Atlantic Scientific Review Group, of which The HSUS is also a member, that bycatch levels for the first year had not declined as hoped and compliance with mitigation measures was less than desirable (D. Palika, NMFS, pers comm, February 10, 2011).

This bycatch of harbor porpoise occurs at levels that are not deemed sustainable, and this is an ongoing and largely unmitigated problem for the stock. For that reason alone, the fishery is not a sustainable fishery.

Bottlenose Dolphins

Coastal Migratory Bottlenose Dolphins

This stock is listed as depleted under the MMPA. They range seasonally from Central Florida to Long Island (NMFS 2009a final /NMFS 2010 draft). The dolphins are managed in sub-stocks to better reflect the fact that some portions of the stock range differently in different seasons. The NMFS states in the

Comments of the HSUS on MSC Consideration of the Spiny Dogfish Fishery

stock assessment that the "complex seasonal spatial movements and the overlap of coastal and estuarine stocks in the waters of North Carolina greatly limit the ability to fully assess the mortality of each of these stocks." (NMFS 2009a) Each of the 5 management units/sub-stocks that are managed within the migratory stock have separate PBRs although the level of fishery-related mortality is unknown for some due to limited observer programs. For those stocks where the level of mortality is estimated by NMFS, PBR is not exceeded, though for some (e.g. the southern migratory management unit) close to half the PBR is killed in net fisheries.

Bays, Sounds and Estuarine Bottlenose Dolphin Stocks

In recent years, the NMFS has recognized that some bottlenose dolphins remain resident in localized bays, sounds and estuaries along the mid-Atlantic and southeastern coastal U.S. The current draft stock assessment (NMFS 2010) details nine of these stocks. Most have undetermined PBRs because the NMFS is still perfecting issues of stock identity. (Ibid.) Some of them are believed to be very small and have documented mortality from gillnets. For example, bottlenose dolphins in the North Carolina estuarine stock are subject to up to 22 fishery-related mortalities each year with an undetermined PBR. There are currently restrictions in place (e.g., time area closures) to protect some of the coastal migratory stocks, but there are NO measures designated to reduce mortality in the smaller bays, sounds and estuarine stocks.

Humpback Whales and Right Whales

Humpback Whales

Humpbacks are designated as endangered species under the US Endangered Species Act (ESA). The Gulf of Maine stock has a PBR of 1.1 per year and yet sustains a minimum of 4.6 fishery-related mortalities each year on average over the most recent 5 years for which data are available (i.e., 2004-2008). (NMFS 2010) Evidence of fishery-related mortality is almost exclusively from stranded animals or those seen at sea towing entangling gear. Rarely can gear be identified to fishery, but many are gillnet-related entanglements as I discuss below.

As stated above, the NMFS generally analyses by gear type (i.e., gillnet) rather than target species of the gillnets. There are ample instances of humpbacks entangled in gillnet. For example, in 2008, the NMFS reported an entangled humpback off North Carolina on January 6 whose body had rope and some "netting;" the body condition was so poor that it was deemed a serious injury likely to result in mortality. On May 30th, a dead humpback was found east of Wellfleet MA, tangled in rope with a high flyer and polyball typical of gillnet gear. On June 9th another dead humpback was found east of Wellfleet with rope and "netting" around the tail region with a line leading to a poly ball. On July 10, a live humpback was found entangled in gillnet east of Chatham, MA with blood in the water and its left flipper pinned to its body. The NMFS observer on board the gillnet vessel that attempted to cut some of the gear off the whale was unable to determine whether the gear that remained on the whale would be life threatening. In this latter case, a NMFS observer was present to document the incident and reported the target species as groundfish; however, the net was identical in nature to that used to target dogfish. Further, it contained all the gear modifications required by NMFS (i.e., the proper number of weak links), yet it had entangled an endangered humpback that could well have died if not removed from the gear. Thus even the gear modifications (mitigation) required by the NMFS are insufficient to prevent mortality and serious injury at levels over the NMFS' PBR level.

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While the incidents described above are a summary of 2008 alone, the NMFS documents entanglements annually on a data base that is replete with similar examples for each year (NMFS multiple years). These include, for example, two incidents in 2007 in the mid-Atlantic that would have been fatal but for boaters happening upon badly entangled whales having difficulty breathing and reporting it to professional disentankers. At least 3 other incidents of entangled and injured humpbacks occurred in 2007 that were reported to involve "netting."

The most recent year for which NMFS analysis was complete was 2008. However, records kept by the Provincetown Center for Coastal Studies show that this problem is ongoing. Most recently, on January 7th 2011, a humpback was seen badly entangled in gillnetting off the Outer Banks of NC. The netting completely wrapped its head and mouth and was over its tail flukes as well. This would prevent feeding and likely result in fatality since no disentanglement response was possible.

The on-going and unsustainable levels of mortality and serious injury of large endangered whales in gillnets is a major topic of discussion scheduled for the April 2011 re-convening of the Atlantic Large Whale Take Reduction Team.

North Atlantic Right Whales

Although trap and pot gear is most often implicated in entanglements of right whales, they too become entangled in gillnets. For example, the Center for Coastal Studies annals include an entanglement of a right whale in October 2010. Right whale #3120 was photo-documented by the Whale Center of New England entangled in netting that was across its back and through the mouth, perhaps also involving one or both flippers. Initially sighted near Jeffrey's ledge in October, the whale still retained the gear as of December 2010, when it was last seen. The PBR for right whales is less than one per year and no fisheries take is authorized. Critically endangered right whales are also at risk from gillnet gear, including that used to target spiny dogfish.

Endangered Whale Entanglement Generally

All gillnet gear is virtually identical in potential for entangling and killing large endangered whales, and a significant number of entanglements—many fatal—occur annually. The differences in configuration between gillnet set for spiny dogfish and that for various groundfish, is largely a difference of mesh size and twine diameter rather than its mode of fishing (i.e., all are weighted to the bottom, with multiple nets bridled together and with a floatline and buoy lines at the end to assure that the nets stand upright from the bottom). As such, any gillnet entanglement is evidence of the threat posed by dogfish nets, since the nets are indistinguishable and it is often difficult or impossible to determine the net's target species after the fact.

The fact that the NMFS does not classify entanglements by target species of the gillnet should not alleviate the concern for risk posed by the dogfish gillnet fishery. To refuse to recognize its threat to large endangered whales, and its contribution to unsustainable levels of mortality, simply because the NMFS does not speculate by target when attributing deaths to gillnets would be akin to the government refusing to put a consumer warning label on alcohol manufactured by Seagrams simply because—even though there is objective evidence of the risk of pregnant women consuming alcohol—you can't prove that Seagrams was linked to any particular case of fetal alcohol syndrome. Its properties are really

Comments of the HSUS on MSC Consideration of the Spiny Dogfish Fishery

no different than any other type of hard liquor. Similarly, dogfish gillnets are identical to other groundfish nets in the risk-prone configuration.

Further, even nets configured with the legally mandated gear modifications (e.g., weak links) have been responsible for potentially life threatening entanglements. Mitigation has not been effective.

Conclusion

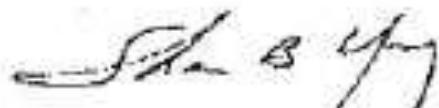
If a fishery is certified as "sustainable," it is important both that the target species be caught in a sustainable manner and that non-target species are not harmed in levels that threaten large or localized populations. This fishery is not conducted in a manner that is sustainable.

Bycatch of endangered large whales in gillnets occurs at levels exceeding the NMFS-calculated sustainable level. Despite requirements for the use of weak links in these nets, fatal entanglements still occur and require additional mitigation. Bycatch-related mortality of harbor porpoise is scandalous. In the 1990's it exceeded 1,000 animals a year but was reduced with the implementation of acoustic "pingers." Shifting effort and widespread disregard of the legal mandate by gillnetters—including vessels targeting spiny dogfish—resulted in bycatch mortality once again exceeding 1,000 porpoises a year. This non-compliance with a legal mandate has resulted in mortality that exceeds NMFS'-calculated sustainable levels (the PBR) and demonstrates a deplorable level of bad faith with regard to complying with mitigation measures designed to assure sustainability. The dogfish fishery is culpable, as they are a significant part of this problem.

This fishery should not receive certification as "sustainable." It would be an insult to fisheries that are conducted in a more responsible manner.

Thank you for the opportunity to comment.

Sincerely,



Sharon B. Young
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References Cited

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<http://www.nefsc.noaa.gov/publications/tm/tm213/>

Comments of the HSUS on MSC Consideration of the Spiny Dogfish Fishery

NMFS 2009a. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2009; NOAA Tech Memo NMFS NE 213; 528 p. Bottlenose dolphin stock assessments available at:

<http://www.nefsc.noaa.gov/publications/tm/tm213/>

NMFS 2010. U.S. Atlantic and Gulf of Mexico Marine Mammal Stock Assessments – 2010 Draft. All draft stock assessments for 2010 are available at: http://www.nmfs.noaa.gov/pr/pdf/cars/ao2010_draft.pdf

NMFS Multiple Years. NMFS Large Whale Entanglement and Ship Strike Reports for 2006, 2007 and 2008 available at: <http://www.nmfs.noaa.gov/whaletrp/>



Sharon Young
Marine Issues Field Director
The Humane Society of the United States

20 February 2012

By email to syoung@humane.org

Dear Sharon

MSC Certification: The United States Atlantic Fishery for Spiny Dogfish (*Squalus acanthias*)

We are about to post the public comment draft report on the captioned fishery on the MSC Web Site. The purpose of this letter is to confirm that in preparing the report we took into full consideration the contents of your letter dated 25 February, 2011, which is included in an annex to the report. As you are aware, your comments were lengthy and detailed; it would be impractical to go through them point-by-point in a letter. I would therefore ask you to review the draft report and make comments, as appropriate. In the final report, we will respond to the points you make one-by-one and make changes to the draft report as required.

You will be aware that should the case merit and you are not satisfied with our response to your comments on the Public Comment Draft Report, stakeholders may object to the determination contained in the Final Report which is version 5 in the reporting process.

I look forward to hearing from you.

Yours sincerely

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March 12, 2011

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Dear Ian:

Thank you for the opportunity to submit written comments as a follow up to our in-person meeting about the possible Marine Stewardship Council (MSC) certification of up to 24 U.S. Atlantic gillnet, longline, and trawl fisheries for spiny dogfish (*Squalus acanthias*).

As discussed, many of my colleagues and I are concerned that the following factors associated with these dogfish fisheries make them exceptionally poor choices for the reward of an ecolabel, especially given the MSC's stated commitment to "never compromise on environmental standards":

- Species' inherent vulnerability (slow growth, lengthy gestation, few young)
- Practice of targeting schools of pregnant females (the largest individuals)
- Recruitment failure in the not too distant past due to serious, long-term overfishing
- Predicted decline in target population starting this year
- Truncated age structure
- Skewed sex ratio (significantly more males than females)
- Yet un-quantified effects of reduced size of reproductive females
- Bycatch of protected, prohibited, and overfished species
- Damage to habitat and/or discarded animals
- Disjointed state/Federal management plans
- Federal quota overages in three of past five years
- Lack of coordination with respect to Canadian fishery on same population
- History of industry pressing for catch limits that exceed scientific advice
- Internationally recognized failure of managers to heed scientific advice
- Lack of a Federal rebuilding target
- Considerable uncertainty

Details regarding these factors and related concerns are offered below according to the MSC categories associated with **population health, bycatch issues, and management reliability**.

HEALTH OF TARGET POPULATION

Inherent vulnerability

Spiny dogfish are exceptionally susceptible to overfishing, even when compared to other sharks. This species' aggregating habit, late maturity, low reproductive capacity, long generation time, and extremely low intrinsic rate of population increase make it one of the world's most vulnerable, commercial fish species. In the Northwest Atlantic, female spiny dogfish do not begin to reproduce until after age 12 and then give birth to only 2-9 pups after a record-long, two-year gestation.

The Food and Agriculture Organization (FAO) of the United Nations convened technical consultations in 2000 and 2001 to examine the resilience and extinction risk of marine fish in order to suggest listing criteria for the Convention on International Trade in Endangered Species (CITES). Expert participants found that long-lived, late-maturing species are at a relatively high risk of extinction from exploitation, and that life history characteristics, especially productivity, were key factors in extinction risk, and that the most vulnerable species are those with an intrinsic rate of population increase of less than 0.14 and a generation time of greater than 10 years (FAO 2001). Spiny dogfish fit within these parameters of exceptional vulnerability (the lowest productivity category for commercially exploited aquatic species).

The FAO report also highlighted other risk factors that hamper sustainability, including selectivity of removals; age, size or stage structure of a population; social structure, including sex ratio; and vulnerability at different life stages. All of these risk factors apply to spiny dogfish, which aggregate in schools of pregnant females that can be easily targeted.

Biomass

I assume that you are well aware of the widely reported "rebuilt" status of U.S. Atlantic spiny dogfish as well as the 2010 report on the species status from the Transboundary Resources Assessment Committee (TRAC) (from which we draw many of the following points).

It seems worth noting that the latest estimates of Northwest Atlantic spiny dogfish biomass are only slightly above the Atlantic States Marine Fisheries Commission (ASMFC) biomass target. More important, it is essential to recognize that *the population is predicted to decline between 2011 and 2017 as a result of record low recruitment from 1997-2003. After 2017, mature female biomass recovery is dependent on recruitment improving despite decreased female size and a skewed sex ratio.*

Given that the MSC considers the level of uncertainty associated with population assessment, we note that the TRAC meeting participants were not able to reach consensus regarding the spiny dogfish population assessment.

Recruitment

The TRAC report underscores that spiny dogfish fecundity is low and highlights that recent recruitment, while improved since 2003, has been lower than expected. Scientists point to decreased maternal size and skewed sex ratio as possible reasons, but questions remain.

Size Structure

Scientists report marked declines in abundance of large (60+cm) dogfish, a pronounced, consistent decline in the average length of mature females (1992-early 2000s), and a resulting decline in average pup size. Pup survival is thought to decrease with size.

Sex Ratio

The ratio of mature male to mature female dogfish has fluctuated since 1993 and, while improved, remains skewed. The lack of direct evidence for demonstrating a resulting negative effect on reproductive output should raise more concern with respect to uncertainty of projections and should underscore the need for a precautionary approach.

Limit and reference points

It appears that there is still no agreed biomass target under the Federal Spiny Dogfish Fishery Management Plan (FMP) as the original target was disapproved in 2000. Such a long-term, significant oversight does little to signal that maintaining appropriate spiny dogfish reference points is a priority for fishery managers.

Additional Uncertainty

Documents associated with the September 2010 meeting of the Spiny Dogfish Monitoring Committee reflect considerable uncertainty with respect to dogfish discards and Canadian fisheries and yet the buffer incorporated into the landings limit is described as “small.”

IMPACTS ON THE ECOSYSTEM

Bycatch

The MSC standards promote fisheries that do not pose risk of serious harm to recovery of retained and bycatch species. The MSC highlights the need for precautionary strategies to protect Endangered, Threatened, or Protected Species (ETPs) and monitor related impacts.

As you are aware, the Humane Society of the United States has documented serious issues with respect to Atlantic gillnet fishery bycatch of:

- right whales (*Eubalaena glacialis*)
- humpback whales (*Megaptera novaeangliae*)
- harbor porpoises (*Phocoena phocoena*), and
- bottlenose dolphins (*Tursiops truncatus*).

We urge you to take special note and consideration of this compelling cause for alarm stemming from some of the fisheries seeking certification.

In addition, the 2005 NMFS Bycatch Priorities and Implementation Plan for the Northeast Region reports that Mid-Atlantic dogfish gillnet fisheries have bycatch of:

- pilot whale (*Globicephala spp.*)
- common dolphin (*Delphinus spp.*), and
- sea turtles (species undetermined).

As we discussed, spiny dogfish fisheries, depending on the region, take numerous prohibited fish species as bycatch, including:

- thorny skate (*Amblyraja radiata*)
- barndoor skate (*Dipturus laevis*)
- smooth skate (*Malacoraja senta*)
- dusky shark (*Carcharhinus obscurus*)
- sand tiger shark (*Carcharias taurus*)
- sandbar shark (*Carcharhinus plumbeus*), and
- bigeye thresher shark (*Alopias superciliosus*)

Some Atlantic spiny dogfish fisheries are also likely taking as bycatch the following species included on the National Marine Fisheries Service (NMFS) Species of Concern list:

- Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) *proposed under Endangered Species Act
- Atlantic halibut (*Hippoglossus hippoglossus*)
- Atlantic wolffish (*Anarhichas lupus*)
- cusk (*Brosme brosme*)

Atlantic dogfish fisheries take additional overfished groundfish species as bycatch.

The fate of animals, particularly fish species, discarded in these fisheries is generally not well studied or documented.

Habitat

As we discussed, there is widespread concern among the conservation and science communities with respect to damage to vulnerable benthic habitat from the use of bottom trawl gear. Trawls, gillnets, and longlines have the potential to break free and entangle marine wildlife and/or contribute to marine pollution.

RELIABILITY OF MANAGEMENT SYSTEM

Given that spiny dogfish fisheries occur in U.S. state, Federal, and Canadian waters and are fishing essentially the same population, the lack of bi-lateral management as well as the loose connection between the state and Federal management plans is cause for great concern, as are the past decisions made by key management bodies.

As we discussed, I witnessed for many years repeated failures by the Atlantic States Marine Fisheries Commission (ASMFC) with respect to heeding scientific advice for spiny dogfish limits. In at least one case, managers adopted limits that had not been evaluated by their own technical committee, despite agreed procedures for such review. Indeed, the ASMFC became internationally notorious for such irresponsible actions; a 2007 FAO expert report noted the serious fisheries management failure and lack of coordination between Federal and state fishery management plans for the US Atlantic population, and called for "a closer alignment between management measures and scientific advice" (FAO 2007). Whereas the most recent spiny dogfish limits set by the ASMFC have been in line with scientific recommendations, it is important to note that in these cases advice has allowed for substantial increases in fishing. At the ASMFC level, there have been no fundamental changes to provide assurance that excessive limits would not again become the norm if/when scientists call for dogfish catch reductions.

As a result of the disconnect between Atlantic state and NMFS regulations, the Federal Atlantic spiny dogfish quota has been substantially exceeded in three of the last five years (156%, 146%, 204% taken by the end of April 2007, 2008, and 2009, respectively).

The New England Fishery Management Council (NEFMC) also has a problematic record with respect to following scientific advice for dogfish limits. As recently as 2009, the NEFMC rejected the Monitoring Committee advice (12 million lbs) and instead employed an alternative fishing mortality rate to derive a much higher quota of more than 20 million lbs.

Reckless dogfish quota decisions have of course been driven in large part by vocal representatives of the dogfish fishing industry whose advocacy for higher than advised fishing limits is well documented in the public record since the late 1990s. Associated fishermen have united to fight science-based dogfish catch limits, promote woefully outdated (1953) accounts of the dogfish diet, fund alternative scientific accounts of stock status and feeding habits, and disparage conservationists' efforts. One has to question if such behavior is in line with the MSC's laudable goal of "rewarding sustainable fishing practices."

Whereas the dogfish quota setting records of the Mid-Atlantic Fishery Management Council and the NMFS have been consistently sound, and implementation of U.S. fisheries law amendments now provides for increased accountability in related processes, the ability for the ASMFC to set dogfish fishing limits that exceed those for Federal waters remains a serious

threat to dogfish sustainability, particularly if interest in the fishery were to resurge. Similar arguments can be made with respect to Canadian dogfish limits which have been based on catch history, not scientific assessment. Because of this lack of coordination, the MSC goals of "well defined and effective control rules" are not met.

CONCLUSION

Whereas the biomass of Northwest Atlantic spiny dogfish has been increasing due to management and has recently exceeded the target level, this population cannot be considered healthy nor can the "harvest strategy" be considered "robust and precautionary" as prescribed in certain MSC criteria.

Egregious overfishing of Northwest Atlantic spiny dogfish -- focused on pregnant females, driven by industry pressure, and allowed by the fishery management process -- led to nearly a decade of recruitment failure of which all the negative effects have yet to be realized. The population remains in a precarious state, suffering from a truncated age structure, a skewed sex ratio, and decreased pup production, and is predicted to decline in the near future to well below target levels. Renewed recovery is predicated on good recruitment and associated timeframes are highly uncertain. Protection of sub-adult and mature females, by minimizing directed fishing, remains prudent. A precautionary approach, appropriate for such slow growing animals and called for by the MSC, cannot be assured through the current, disjointed management framework, particularly when under pressure from increased demand.

Ecolabels for Northwest Atlantic spiny dogfish will serve to encourage targeted fishing on the segment of the population (mature females) that is most crucial for population recovery.

Given all of these factors as they compare to MSC standards, I cannot see how MSC certification is advisable or warranted for any of the applicant spiny dogfish fisheries.

Thank you for your consideration. I look forward to the next steps in this process.

Sincerely,



Sonja V. Fordham
President

Literature Cited:

FAO. 2001. Report of the second technical consultation of the CITES criteria for listing commercially exploited aquatic species. *FAO Fisheries Report No. 667*. FAO, Rome.

FAO. 2007. Food and Agricultural Organization of the United Nations. Report of the Second FAO Ad Hoc Expert Advisory Panel for the Assessment of Proposals to Amend Appendices I and II of CITES concerning Commercially Exploited Aquatic Species. Rome. March 26-30, 2007. *FAO Fisheries Report No. 833*. FIMF/R833. FAO, Rome.



Sonja V. Fordham
President
Shark Advocates International

20 February 2012

By email to sonjavivska@gmail.com

Dear Sonja

MSC Certification: The United States Atlantic Fishery for Spiny Dogfish (*Squalus acanthias*)

We are about to post the public comment draft report on the captioned fishery on the MSC Web Site. The purpose of this letter is to confirm that in preparing the report we took into full consideration the contents of your letter dated 12 March, 2011. This is included in a report annex. Also I confirm that we received your email dated 1 February, 2012 concerning Atlantic Sturgeon.

As you are aware, your comments were lengthy and detailed; it would be impractical to go through them point-by-point in a letter. I would therefore ask you to review the draft report and make comments, as appropriate. In the final report, we will respond to the points you make one-by-one and make changes to the draft report as required.

You will be aware that should the case merit and you are not satisfied with our response to your comments on the Public Comment Draft Report, stakeholders may object to the determination contained in the Final Report which is version 5 in the reporting process.

I look forward to hearing from you.

Yours sincerely

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HAILIFE Objection to MSC Certification US Atlantic Spiny Dogfish

1. Preface

Sharks are crucial to marine ecosystems. They maintain a healthy balance in the population of preying species and keep the oceans healthy by removing ill or diseased animals. They are an important resource in supporting local economies through fishing and as an attraction to tourist divers.

But sharks are declining globally. Overfishing has reduced many shark populations around the world to levels that threaten their continued existence. Shark numbers have fallen by more than 80% in many cases, and the continued existence of certain species is at immediate risk in some regions.

The International Union for the Conservation of Nature (IUCN) - the leading authority on the status of the world's plant and animal species - publishes the Red List of Threatened Species. IUCN Specialist Groups assess and classify plants and animals to identify those in danger of extinction.

Species assessed as "critically endangered", "endangered" or "vulnerable" are considered by the IUCN to be "threatened". The 2011 Red List review of 1083 sharks, rays and chimaeras found that 25 species are critically endangered, 41 species endangered and 115 vulnerable to extinction. So 181 of the ca. 500 species of Chondrichthyes fear a decline below biological safe stocks. A further 499 species are categorized as "data deficient", meaning that more information is required to place them in a threat category.

Internationale Kampagne
zur Rettung der Haie
International Shark
Protection Campaign

Campaign Coordination
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Bundesarbeitsgemeinschaft
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Durchlaufspenden an den
NABU werden zu 100% für
die Kampagne und Haishutz-
aktivitäten der HAILIFE-Partner-
organisationen verwendet.

Auf Wunsch senden wir
Ihnen eine Zuwendungs-
bestätigung zu.

The IUCN has assessed the Spiny Dogfish as to be under threat in Atlantic waters. Populations in the northwest and northeast Atlantic are currently assessed as being “vulnerable” and “endangered” respectively (Fordham 2003).

Bearing this in mind the fishing of Spiny Dogfish sharks has a global impact on the status of all shark stocks and thus should be treated with great caution. As a matter of fact all fish stocks can be harvested sustainable (and attain stability at a lower basis), as long as the outtake stays minimal. However, a certification would permit the crash of the standing stock ($B < B_{msy}$) and should hinder such exploitation - even if there is a proposed recovery plan.

It is crucial also to note that the MSC eco-label should only be applied to rules certifying fishing of those stocks that do not effect and threaten other animals in the seas. In the case of the US Spiny Dogfish shark fisheries we feel that this certification will open the doors to the extinction of other sharks, because it will accept the use of shark fins for use in the shark fin soup business.

A MSC certification on US Atlantic Spiny Dogfish gives the false impression that the entire fishing industry for sharks is sustainable, when in reality it is not. These arguments should lead to a refusal of the current MSC fishing assessment of the US Atlantic Spiny Dogfish.

2. The certification of the US Atlantic Spiny Dogfish fishery does not meet the “MSC Fishery Standard”

In our opinion the assessment process on US Atlantic Spiny Dogfish does not meet the MSC standards in several aspects and also infringes the “MSC Principles and Criteria for Sustainable Fishing” No. 1-3:

2.1 The available stock status is likely to be overestimated

Spiny Dogfish are small coastal sharks inhabiting the temperate continental shelves throughout the world. In North America they are found off both the Atlantic and Pacific coasts of Canada. The U.S. Spiny Dogfish are slow growing and are reported to reach a maximum age of 35 to 40 years. Spiny Dogfish in the North Western (NW) Atlantic Ocean reach sexual maturity from 6 to 12 years of age for male and females respectively. Some females

start reproduction at an unbelievable 20-35 years. They typically give birth to 6 pups after a gestation period of 18-24 months. They prey upon a wide variety of fish and invertebrate species.

As Spiny Dogfish are among the slowest-growing and longest-living sharks known worldwide they are therefore inherently vulnerable to fishing. Stock status in the U.S. Atlantic has been extremely poor since the late 1990s. No complete formal stock assessment has been conducted for Spiny Dogfish stocks off the U.S. and Canada in federal waters, but fishery and independent data indicates that the stock appears to be slowly growing, but, in a weak state. The stock structure of the western Atlantic population is still under review, but for management purposes they are considered as one coast-wide stock.

The history of stocks has shown a high drop of 70% from the 1980s. In 1998 the National Marine Fisheries Service declared Spiny Dogfish in U.S. waters as being "overfished" resulting in a complete closure of the fisheries between 2001 and 2003. Some increase in survey abundances have been shown since 2006. The latest estimates by NOAA and the report published by the Mid-Atlantic Fishery Management Council (October 2011) show a minimal baseline for the successfully fishing of Spiny Dogfish. The National Marine Fisheries Service also notes that the stock biomass is projected to decline in the future because of poor recruitment in earlier years. It is noteworthy that the amount of total dead discards of Spiny Dogfish have been 4,081, while the landings were 5,594 (mt) in 2010.

However, even these estimates of fishing mortality measurement can error on stock size and total catch, depending on the sampling variability of the trawl survey, variations in the footprint of the trawl, and uncertainty on the discard estimates for commercial fisheries and landings and discards in recreational fishery.

Regarding Principle 1:

"A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery"
this principle would be clearly infringed.

2.2 Fishing pressure has an impact on spawning aggregations and segregation by sex

Spiny Dogfish are known to school by size and sex, and remain with similar sized animals through their lives. Individual schools tend to consist of very large females, medium sized dogfish that are either mature males or immature females or small immature dogfish of both sexes and usually at a 1:1 ratio. But mature female Spiny Dogfish tend to school, while juveniles tend to school offshore. These schools of pregnant females are documented to be highly susceptible to fishing.

Catches in the U.S. Atlantic are primarily made up of mature females. Sex ratios of mature females to male Spiny Dogfish have changed from 2:1 prior to 1992, to 7:1 in 2001, and is currently at a 4:1 level.

Since Spiny Dogfish have one of the longest reproductive cycles reported for vertebrates, these biased fishery pressure has a severe impact on future stocks. Some indices show that female fecundity increases with female size and age. Also reported are females with pups of different sizes, suggesting the possibility of asynchronous reproduction. This could suggest that modern Spiny Dogfish are more productive than originally thought. However, these results are of a preliminary nature.

Thus regarding principle 2, the consequences of Spiny Dogfish fishing has a particular impact on the genetic diversity and population of this species. It contradicts the standard set out in MSC principle 2.1 :

"The fishery is conducted in a manner that does not threaten biological diversity at the genetic, species or population levels and avoids or minimises mortality of, or injuries to endangered, threatened or protected species."

2.3 Fishing methods have a great effect on the habitat structure

Atlantic Spiny Dogfish are caught in several different fisheries, and in different ways including longline, gillnet and trawl fisheries. Bycatch of bottlenose dolphins in the gillnet fisheries is of critical concern. Also many US Spiny Dogfish are caught in trawls, with lesser amounts being caught by bottom gillnets and longlines.

The impact of indiscriminate longline and bottom trawl fishing on other species as bycatch, especially those that fall into the category of endangered, threatened or protected species, is of primary importance. Other shark species such as the shortfin mako shark or porbeagle shark and also loggerhead turtle and leatherback turtle should be of special interest. Under the US Endangered Species Act, loggerhead turtles are considered "Threatened" and leatherback turtles "Endangered". Another species of concern is the overfished bluefin tuna in US waters.

The trawling methods are certainly of high conservation concern. Thus a certification would infringe MSC Principle 2.1 because of its wide impact on the ecosystem and, by not making use of the best fishing practice in gear. This infringes the Standard 2.1 stating:

"The fishery is conducted in a way that maintains natural functional relationships among species and should not lead to trophic cascades or ecosystem state changes."

2.4 Effects caused by climate change and distribution patterns are not validated

Spiny Dogfish are found worldwide in temperate waters and are extensively distributed. They are primarily epibenthic and are found in both inshore and offshore shelf waters down to 900 m. Tagging data suggests Spiny Dogfish have considerable fluctuations in their vertical migrations and a large daily migration. This could suggest they are not primarily epibenthic, but more tagging and research must be completed before final conclusions can be reached.

The species exhibits a high natural population variability, driven by broad environmental changes (e.g. El Nino; decadal oscillations). Spiny Dogfish follow a seasonal migrations based on water temperature. They migrate north in the spring and south in the fall and winter and prefer temperatures between 7.2 to 12.8 C. It is plausible that broad-scale environmental changes that affect water temperature could influence this migratory behaviour. It is not clear whether or not broad-scale environmental changes can affect the population variability of this species.

Principle 2.3 states:

"Where exploited populations are depleted, the fishery will be executed such that recovery and rebuilding is allowed to occur to a specified level within specified time frames, consistent with the precautionary approach and considering the ability of the population to produce long-term potential yields."

We wonder how such change in nature is respected by the MSC certification and if this ecosystem approach is truly considered.

2.6 Can management practices be successfully implemented?

Management of the Atlantic Spiny Dogfish fisheries has a history of state non-compliance and state rejection of scientific advice. In the past there were many occasions where mismanagement has lead to unreasonably high fishing pressure resulting in an overfished stock.

Also the nonexistent bilateral assessment and fishery management with Canada should be noted.

As such the MSC principle 3.11:

"contains appropriate procedures for effective compliance, monitoring, control, surveillance and enforcement which ensure that established limits to exploitation are not exceeded and specifies corrective actions to be taken in the event that they are"
is not fulfilled.

3. Final comments on the MSC certification

MSC Principles represent the main standards for a sustainable fishery policy in practice. These principles require good statistics from the fishing industry, but also require an overall sustainable management strategy that meets the legally binding United Nations "Precautionary Approach".

Principle 1 states briefly a "sustainable fishery", principle 2 an "ecosystem friendly fishery" and principle 3, a "well managed fishery system". However, if applied to the current certification process of the US Spiny Dogfish fisheries all three principles are severely infringed, as shown above. A MSC certified dogfish fishery system, if successful, can certainly

ne known as a “lowering of the bar” of MSC standards by consulting companies in favor of their clients.

Although the management recommendations for a Spiny Dogfish fishery can be an issue provoking much argument, and discussion for the experts, the general acknowledgment of specific shark fishing targets infringes the international efforts to protect these fishes from extinction. MSC would allow the certification of fisheries which are contrary to the mission of ocean protection.

The above mentioned consequences will invariably lead to the result that a certification of Spiny Dogfish is counterproductive to all international efforts on shark-protection. The German Government, backed by many NGOs, appealed for an Appendix II – a listing of Porbeagle Sharks and Spiny Dogfish with CITES 2010 in Doha. The decision’s result was, - due to technical reasons – negative, with a one-vote-difference. Of course with CITES 2013 a new appeal will be launched, which will be more complicated with an active Spiny Dogfish Certification by the MSC, based on weak scientific evidence.

Addendum: The fish is not usable for fish consumption

It is not a topic of the ongoing MSC certification, but it has to be mentioned that the HAILIFE-partner SHARKPROJECT is in serious discussion with the MSC Germany on the toxic relevance of shark-meat. All proofs of Spiny Dogfish sales in Germany showed that mercury-parameters are over the permissible quota-limits set by German Food Laws.

These fish contain levels of mercury or PCBs that may pose a health risk to adults and children. Children (also infants and embryos) are particularly vulnerable to the health effects of mercury, since their brain and nervous systems are still developing. They may suffer learning disabilities and developmental interruptions from prolonged or repeated exposure to even small amounts of mercury. Children who have been exposed to mercury before birth may experience problems with mental development and coordination, including thinking, learning and problem-solving later in life.

In our view this topic could infringe the recognition of “social” aspects within the MSC Principles No. 2:

"The development and maintenance of effective fisheries management systems, taking into account all relevant biological, technological, economic, social, environmental and commercial aspects"

Background: About HAILIFE

HAILIFE is an open initiative, representing the common interest of millions of members of the participating organizations, giving sharks a future and protecting the marine ecosystem. The campaign serves as a platform for the implementation of the international objective of conserving biodiversity in accordance with the Convention on Biodiversity (CBD, Rio 1992), which aims to stop the world wide loss of bio-diversity by 2010 (as agreed at the Earth Summit, Johannesburg 2002), and in line with the decisions on the protection of the marine environment taken at the 7th Conference of the CBD Parties (Kuala Lumpur, February 2004).

The campaign is supported by numerous major nature conservation, species protection, zoological, animal welfare and scientific organisations. HAILIFE represents the common interest of millions of members in the participating organizations, in giving sharks a future and protecting the marine ecosystem. The HAILIFE campaign targets the following objectives:

- to enable individuals and organisations to join forces in saving the sharks
- to spread a more positive image of the fascinating creatures known as sharks
- to put more shark species under protection
- to achieve a sustainable management system for shark fisheries
- to ensure that methods of catching and killing of sharks be less cruel in future

<http://www.hai-society.org/>

Sources:

Rago P.J. and K.A. Sosebee. 2011. Update on the status of Spiny Dogfish in 2010 and initial evaluation of alternative harvest strategies. Report to MAFMC SSC September 12, 2011. 32 p.

Rago, P.J. 2011. Estimation of an FMSY Proxy Reference Point for Spiny Dogfish. Report to Mid-Atlantic Fishery Management Council Science and Statistical Committee August 10, 2011. 30 p.

Rago P.J. and K.A. Sosebee. 2010. Biological Reference Points for Spiny Dogfish . Northeast Fish Sci Cent Ref Doc. 10-06; 52 p.

Mid-Atlantic Fishery Management Council:
<http://www.mafmc.org/fmp/dogfish/dogfish.htm>

FDAs consumer advisory explaining the risks of mercury in seafood:
<http://www.fda.gov/Food/ResourcesForYou/Consumers/ucm110591.htm>

Sven Thanheiser & Onno Gross
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20 February 2012

By email to Sven.Thanheiser@t-online.de Onnogross@aol.com

Dear Sven & Onno

MSC Certification: The United States Atlantic Fishery for Spiny Dogfish (*Squalus acanthias*)

We are about to post the public comment draft report on the captioned fishery on the MSC Web Site. The purpose of this letter is to confirm that in preparing the report we took into full consideration your comments of August 2011, which is included in an annex to the report. As you are aware, your comments were lengthy and detailed; it would be impractical to go through them point-by-point in a letter. I would therefore ask you to review the draft report and make comments, as appropriate. In the final report, we will respond to the points you make one-by-one and make changes to the draft report as required.

You will be aware that should the case merit and you are not satisfied with our response to your comments on the Public Comment Draft Report, stakeholders may object to the determination contained in the Final Report which is version 5 in the reporting process.

I look forward to hearing from you.

Yours sincerely

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Appendix 4: Stakeholder Responses to Public Comment Draft Report

Introduction

Responses to the Public Comment Draft Report were received from 23 stakeholders. The audit team response to each is given below, with an indication of how the draft has been changed and if this has resulted in a change in the previously allocated score for individual PIs or any other substantive change in the findings of the assessment process.

Responses: List

American Bluefin Tuna Association (Rich Ruais, Executive Director, American Bluefin Tuna Association, P.O. Box 447, Salem N.H. 03079, rruais@aol.com)
American Scallop Association, Inc.(Ross Paasche, President, 30 Cornell Street, New Bedford, MA 02740, rosspaasche@yahoo.com)
Atlantic States Marine Fisheries Commission (John V. O'Shea, Executive Director, 1050 North Highland Street, Suite 200A-N, Arlington, VA 22201, Phone: 703-842-0740, FAX: 703-842-0741 info@asmfc.org)
Cape Cod Commercial Hook Fishermen's Association, Inc. (Mr. Thomas D. Dempsey, Policy Director, 1566 Main Street, Chatham, MA 02633, Phone 508-945-2432, Fax 508-945-0981, tdempsey@ccchfa.org)
City of Gloucester (Honorable Carolyn A. Kirk (9 Dale Avenue - City Hall, Gloucester, MA 01930, Ph: (978) 281-9700, Fax: (978) 281-9738, ckirk@gloucester-ma.gov)
City of New Bedford (Honorable Jonathan F. Mitchell, 133 William Street, New Bedford, MA 02740 Tel: 508-979-1400 Fax: 508-991-6148 jon.mitchell@newbedford-ma.gov)
Maine Coast Fishermen's Association, Ben Martens, PO Box 112, Topsham, ME 04086, 207-619-1755, ben@midcoastfishermen.org)
Marine Stewardship Council (Dan Hoggarth, Fisheries Oversight Director, Marine Hoise, 1 Snow Hill, London EC1A 2DH, +44 (020) 7246 8900 suzi.keshavarz@MSC.org)
Massachusetts Division of Marine Fisheries (Paul Diodati, Director, 251 Causeway Street, Boston, MA 02114 617/626-1530 email: paul.diodati@state.ma.us).
Massachusetts Lobstermen's Association (Bill Adler, Executive Director, 8 Otis Place, Scituate, MA 02066-1323, 781-545-6984 bill.adler@lobstermen.com)
Mid-Atlantic Fishery Management Council (Dr. Christopher M. Moore, Executive Director, 800 N. State Street, Suite 201, Dover, DE 19901, 302-674-2331 ext. 255, cmoore@mafmc.org)
National Association of Charterboat Operators (Captain Bob Zales, II, President, P.O. Box 2990, Orange Beach, AL 36561, Phone (251) 981-5136, Fax (251) 981-8191, bobzales@att.net)
National Oceanic and Atmospheric Administration, National Marine Fisheries Service, (Samuel D. Rauch, Acting Assistant Administrator for Fisheries, 1315 East-West Highway, Silver Spring, MD 20190, 301-713-2239 x 193 samuel.rauch@noaa.gov)
New England Fishery Management Council (Mr. Paul Howard, Executive Director, 50 Water Street, Mill 2, Newburyport, MA 01950, 978-465-0492 ext. 103 phoward@nefmc.org)
North Carolina Watermen United (Britt Shackelford, President, PO Box 150, Hatteras NC 27943, (252) 986-1031, info@doghousesportfishing.com)
Northeast Fishery Sector III (Nicolas Brancalone, Sector Manager, 10 Witham Street, Gloucester, MA 01930, 978-491-8004, nbrancalone@gmail.com)
Northeast Fishery Sector VII and VIII (Linda McCann, Sector Manager, 114 MacArthur Blvd, New Bedford, MA 02740, (508) 984-0900, nbsector07@comcast.net)
Northeast Seafood Coalition (Jackie O'Dell, Executive Director, 4 Parker St. Suite 102, Gloucester, MA 01930 Phone (978) 283-9992 Fax (978) 283-9959 jackie@northeastseafoodcoalition.org)
Shark Advocates International (Sonja Fordham, President, c/o The Ocean Foundation, 1990 M St NW, Suite 250, Washington DC 20036 +1 202 436 1468 sonja@sharkadvocates.org)
Southeastern Fisheries Association, Inc. (Bob Jones, Executive Director, 1118-B Thomasville Rd., Tallahassee, FL 32303, Phone: 850-224-0612, Fax: 850-222-3663, Bobfish@aol.com)



The Humane Society of the U.S. (Sharon B. Young, Marine Living Field director, 2100 L Street, NW Washington DC 20037, 202 452 1100, syoung@humanesociety.org)

Virginia Seafood Council (Ms. Kim Huskey, Executive Director, 105 Woodhaven Drive, Yorktown, VA 23692, (Office) 757-968-5560, (Cell) 757-880-8553 vaseafoodcouncil@cox.net)

WWF International (Daniel Suddaby, World Wide Fund for Nature, Smart Fishing Initiative, Moenckebergstrasse 27, 20095 Hamburg 44 (0) 2672215395 danielsuddaby@wwf.panda.org)



Stakeholder Comments

American Bluefin Tuna Association

American Bluefin Tuna Association

P.O. Box 447, Salem, NH 03079

(603)898-8862 cell 490-4715

rruais@aol.com

March 30, 2012

Ian Scott

Intertek Moody Marine

99 Wyse Road, Suite 815

Dartmouth, Nova Scotia B3A 4S5

Canada

Re: Marine Stewardship Council certification of the U.S. Atlantic Spiny Dogfish fishery

Dear Mr. Scott:

The American Bluefin Tuna Association is submitting the following comments in support of certification by the Marine Stewardship Council ("MSC") that the U.S. Atlantic Spiny Dogfish fishery is sustainable.

It is the opinion of the American Bluefin Tuna Association that the U.S. Atlantic Spiny Dogfish fishery meets all of the MSC Principles and Criteria for Sustainable Fishing.

Regarding Principle 1:

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted; the fishery must be conducted in a manner that demonstrably leads to their recovery.

The U.S. Atlantic Spiny Dogfish fishery is conducted in a manner that does not lead to over-fishing or depletion of the exploited populations. Support for this conclusion is found at http://www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm, which states "The Atlantic spiny dogfish population has been rebuilt and is currently harvested at a sustainable rate." The National Oceanic and Atmospheric Administration's National Marine Fisheries Service ("NMFS") also concludes the 'Sustainability Status' of the U.S. Atlantic Spiny Dogfish is that it is not overfished and overfishing is not occurring.

Regarding Principle 2:

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Fishing operations in the U.S. Atlantic Spiny Dogfish fishery allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. This is true in large part because the Mid-Atlantic and New England Fishery Management Councils have a joint fishery management plan ("Dogfish FMP") to regulate fishing operations and set an annual quota for U.S. Atlantic Spiny Dogfish in federal waters. Also, the Atlantic States Marine Fisheries Commission works in collaboration with the Mid-Atlantic and New England Fishery Management Councils and manages U.S. Atlantic Spiny Dogfish fishing efforts in state waters. The Dogfish FMP is a prime example of the successful management of a fishery: when



implemented in 2000, the annual quota was set to allow the stock to rebuild and in 2010 NOAA declared the stock rebuilt. Additional support for the conclusion that Principle 2 has been met may be found at www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm.

Regarding Principle 3:

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

The U.S. Atlantic Spiny Dogfish fishery is a prime example of a successful wild-caught fishery whose sustainability is due in large part to compliance with the 10 National Standards of the *Magnuson-Stevens Act* (MSA). The U.S. Atlantic Spiny Dogfish fishery is harvested under a science-based fishery management plan designed around the 10 National Standards that include sustainable harvest rates and ecosystem-based conservation requirements to minimize bycatch and habitat impacts and address social economic impacts. This science-based management process has been evolving since 1976 when the MSA was enacted and eight regional Fishery Management Councils were established to help NMFS manage fisheries based on peer reviewed science of the agency. Most rating and certification programs in the United States, including certification by MSC, are premised on the data provided by NMFS. The data on the U.S. Atlantic Spiny Dogfish is updated quarterly at: www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm

Conclusion:

The American Bluefin Tuna Association encourages MSC to certify the U.S. Atlantic Spiny Dogfish as sustainable because it meets all of the MSC Principles and Criteria for Sustainable Fishing.

Thank you for the opportunity to comment.

Regards,

Rich Ruais, Executive Director
American Bluefin Tuna Association
P.O. Box 447
Salem N.H. 03079
rruais@aol.com

Cc: J. Whiteside, Jr., Esq.
Andy Baler, Nantucket Fish Company
ABTA Executive Committee
Marc Agger

American Scallop Association, Inc.



March 14, 2012

Ian Scott
Intertek Moody Marine
99 Wyse Road, Suite 815
Dartmouth, Nova Scotia B3A 4S5
Canada

Re: Marine Stewardship Council certification of the U.S. Atlantic Spiny Dogfish fishery

Dear Mr. Scott:

The American Scallop Association is submitting the following comments in support of certification by the Marine Stewardship Council ("MSC") that the U.S. Atlantic Spiny Dogfish fishery is sustainable.

The members of the American Scallop Association are primary stakeholders in the U.S. Atlantic Spiny Dogfish fishery and have a vested interest in seeing the continued success of the U.S. Atlantic Spiny Dogfish fishery as a sustainable resource indefinitely.

It is the opinion of the American Scallop Association that the U.S. Atlantic Spiny Dogfish fishery meets all of the MSC Principles and Criteria for Sustainable Fishing.

Regarding Principle 1:

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

The U.S. Atlantic Spiny Dogfish fishery is conducted in a manner that does not lead to over-fishing or depletion of the exploited populations. Support for this conclusion is found at http://www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm, which states "The Atlantic spiny dogfish population has been rebuilt and is currently harvested at a sustainable rate." The National Oceanic and Atmospheric Administration's National Marine Fisheries Service ("NMFS") also concludes the "Sustainability Status" of the U.S. Atlantic Spiny Dogfish is that it is not overfished and overfishing is not occurring.

Regarding Principle 2:

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Fishing operations in the U.S. Atlantic Spiny Dogfish fishery allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. This is true in large part because the Mid-Atlantic and New England Fishery Management Councils have a joint fishery management plan ("Dogfish FMP") to regulate fishing operations and set an annual quota for U.S. Atlantic Spiny Dogfish in federal waters. Also, the Atlantic States Marine Fisheries Commission works in collaboration with the Mid-Atlantic and New England Fishery Management Councils and manages U.S. Atlantic Spiny Dogfish fishing efforts in state waters. The Dogfish FMP is a prime example of the successful management of a fishery: when implemented in 2000, the annual quota was set to allow the stock to rebuild and in 2010 NOAA declared the stock rebuilt. Additional support for the conclusion that Principle 2 has been met may be found at www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm.

Regarding Principle 3:

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

The U.S. Atlantic Spiny Dogfish fishery is a prime example of a successful wild-caught fishery whose sustainability is due in large part to compliance with the 10 National Standards of the *Magnuson-Stevens Act* (MSA). The U.S. Atlantic Spiny Dogfish fishery is harvested under a science-based fishery management plan designed around the 10 National Standards that include sustainable harvest rates and ecosystem-based conservation requirements to minimize bycatch and habitat impacts and address social economic impacts. This science-based management process has been evolving since 1976 when the MSA was enacted and eight regional Fishery Management Councils were established to help NMFS manage fisheries based on peer reviewed science of the agency. Most rating and certification programs in the United States, including certification by MSC, are premised on the data provided by NMFS. The data on the U.S. Atlantic Spiny Dogfish is updated quarterly at: www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm

Conclusion:

The American Scallop Association encourages MSC to certify the U.S. Atlantic Spiny Dogfish as sustainable because it meets all of the MSC Principles and Criteria for Sustainable Fishing.

Thank you for the opportunity to comment.

Regards,



Ross Paasche
President
American Scallop Association, Inc.
30 Cornell Street
New Bedford, MA 02740
rosspaasche@yahoo.com



Atlantic States Marine Fisheries Commission



Atlantic States Marine Fisheries Commission

1050 N. Highland Street • Suite 200A-N • Arlington, VA 22201
703.842.0740 • 703.842.0741 (fax) • www.asmfmc.org

Paul J. Diodati, (MA), Chair

Dr. Louis B. Daniel, III, (NC), Vice-Chair

John V. O'Shea, Executive Director

Healthy, self-sustaining populations for all Atlantic coast fish species or successful restoration well in progress by the year 2015

March 30, 2012

Ian Scott
Intertek Moody Marine
99 Wyse Road, Suite 815
Dartmouth, Nova Scotia B3A 4S5
Canada

Dear Mr. Scott,

I am writing on behalf of the Atlantic States Marine Fisheries Commission's (Commission) Spiny Dogfish & Coastal Sharks Management Board (Board) to comment on the Marine Stewardship Council (MSC) Public Comment Draft Report for The United States Atlantic Fishery for Spiny Dogfish (*Squalus acanthias*). The Board as a whole did not take a position on the draft report because seven of our member states were not considered for certification. However, several of our states have indicated that they will comment in support of the certification.

While the Board is not commenting on the content of the draft report, they are pleased that your independent review process concluded that spiny dogfish are sustainably managed in all states that were considered. Cooperative management efforts between the Commission, Mid-Atlantic and New England Fishery Management Council, and the National Marine Fisheries Service have rebuilt the once severely depleted stock, and we consider this to be a prime example of the successful management of a fishery.

At the foundation of our Spiny Dogfish FMP are science-based quotas that account for all sources of mortality, consider projected future abundance, and allow for the maintenance of the structure, productivity, function, and diversity of the ecosystem. The most recent assessment update found that in 2011, spawning stock biomass exceeded the target for the fourth year in a row.

Thank you for the opportunity to comment on the draft report.

Sincerely,



John V. O'Shea

CC: Spiny Dogfish & Coastal Sharks Management Board

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Cape Cod Commercial Hook Fishermen's Association, Inc



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March 22, 2012

Ian Scott
Intertek Moody Marine
99 Wyse Road, Suite 815
Dartmouth, Nova Scotia B3A 4S5
Canada

Re: Marine Stewardship Council certification of the U.S. Atlantic Spiny Dogfish fishery

Dear Mr. Scott:

The Cape Cod Commercial Hook Fishermen's Association is a member-based non-profit organization focused on protecting both marine resources and fishing communities. We continue to strive to protect healthy fish stocks and profitable local fishing businesses.

We appreciate the opportunity to comment on this process and are writing today in support of the Marine Stewardship Council ("MSC") certification of the U.S. Atlantic Spiny Dogfish fishery as sustainable.

We are confident that the U.S. Atlantic Spiny Dogfish fishery meets all of the MSC Principles and Criteria for Sustainable Fishing.

Regarding Principle 1:

A fishery must be conducted in a manner that does not lead to overfishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

The U.S. Atlantic Spiny Dogfish fishery is conducted in a manner that does not lead to depletion of the targeted stock. Evidence supporting this assertion can be found at http://www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm, which states, "The Atlantic spiny dogfish population has been rebuilt and is currently harvested at a sustainable rate." The National Oceanic and Atmospheric Administration's National Marine Fisheries Service ("NMFS") also confirms that the 'Sustainability Status' of the U.S. Atlantic Spiny Dogfish is not 'overfished' and overfishing is not occurring.

Regarding Principle 2:

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Fishing operations in the U.S. Atlantic Spiny Dogfish fishery do maintain the structure, productivity, function and diversity of the ecosystem on which the fishery depends. This is due in large part to the collaborative efforts of the Mid-Atlantic and New England Fishery Management Councils and the Atlantic States Marine Fisheries Commission.

Protecting a resource, a tradition, and a way of life.

When the fishery was first established in 2000, the U.S. Atlantic Spiny Dogfish stock was depleted and in need of rebuilding. In response, the two regional Councils adopted a joint fishery management plan to regulate fishing operations and set a sustainable annual quota in federal waters. The ASMFC is responsible for U.S. Atlantic Spiny Dogfish fishery management in state waters and routinely coordinates with both Councils. Due to these collaborative efforts, the U.S. Atlantic Spiny Dogfish is now a very successfully managed fishery with a rebuilt resource and annual harvest levels set using the best available science.

Regarding Principle 3:

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

The success and sustainability of the U.S. Atlantic Spiny Dogfish fishery can also be largely attributed to its compliance with the 10 National Standards of the *Magnuson-Stevens Act* (MSA). The U.S. Atlantic Spiny Dogfish fishery is harvested under a science-based fishery management plan guided by the 10 National Standards, including sustainable harvest rates and ecosystem-based conservation requirements designed to minimize bycatch and habitat impacts.

In summary, the Cape Cod Commercial Hook Fishermen's Association strongly encourages MSC to certify the U.S. Atlantic Spiny Dogfish fishery as sustainable because it meets all of the MSC Principles and Criteria for Sustainable Fishing.

Thank you for the opportunity to comment.

Regards,

Thomas D. Dempsey
Policy Director

Protecting a resource, a tradition, and a way of life.

City of Gloucester

City Hall
Nine Dale Avenue
Gloucester, MA 01930



CITY OF GLOUCESTER
OFFICE OF THE MAYOR

TEL 978-281-9700
FAX 978-281-9738
ckirk@gloucester-ma.gov

March 27, 2012

Ian Scott
Intertek Moody Marine
99 Wyse Road, Suite 815
Dartmouth, Nova Scotia B3A 4S5
Canada

Re: Marine Stewardship Council certification of the U.S. Atlantic Spiny Dogfish fishery

Dear Mr. Scott:

The City of Gloucester is submitting the following comments in support of certification by the Marine Stewardship Council ("MSC") that the U.S. Atlantic Spiny Dogfish fishery is sustainable.

The City of Gloucester is a primary stakeholder in the U.S. Atlantic Spiny Dogfish fishery and has a vested interest in seeing the continued success of the fishery as a sustainable resource indefinitely. The City of Gloucester is proud of its' long history as one of the top commercial fishing ports in the world. There are many people whose jobs are directly tied to the U.S. Atlantic Spiny Dogfish fishery at Zeus Packing, Inc., a seafood processing facility in Gloucester. Many more make their living working on commercial fishing vessels that harvest U.S. Atlantic Spiny Dogfish and call Gloucester their home port. Equally important are the hundreds of people employed by companies that provide goods and services to the seafood processing facilities and the fleet, including: ice, fuel, gear, provisions, packaging and transportation.

It is the opinion of the City of Gloucester that the U.S. Atlantic Spiny Dogfish fishery meets all of the MSC Principles and Criteria for Sustainable Fishing.

Regarding Principle 1:

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

The U.S. Atlantic Spiny Dogfish fishery is conducted in a manner that does not lead to over-fishing or depletion of the exploited populations. Support for this conclusion is found at http://www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm, which states "The Atlantic spiny dogfish population has been rebuilt and is currently harvested at a sustainable rate." The National Oceanic and Atmospheric Administration's National Marine Fisheries Service ("NMFS") also concludes the 'Sustainability Status' of the U.S. Atlantic Spiny Dogfish is that it is not overfished and overfishing is not occurring.

Ian Scott
March 27, 2012
Page Two

Regarding Principle 2:

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Fishing operations in the U.S. Atlantic Spiny Dogfish fishery allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. This is true in large part because the Mid-Atlantic and New England Fishery Management Councils have a joint fishery management plan ("Dogfish FMP") to regulate fishing operations and set an annual quota for U.S. Atlantic Spiny Dogfish in federal waters. Also, the Atlantic States Marine Fisheries Commission works in collaboration with the Mid-Atlantic and New England Fishery Management Councils and manages U.S. Atlantic Spiny Dogfish fishing efforts in state waters. The Dogfish FMP is a prime example of the successful management of a fishery: when implemented in 2000, the annual quota was set to allow the stock to rebuild and in 2010 NOAA declared the stock rebuilt. Additional support for the conclusion that Principle 2 has been met may be found at www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm.

Regarding Principle 3:

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

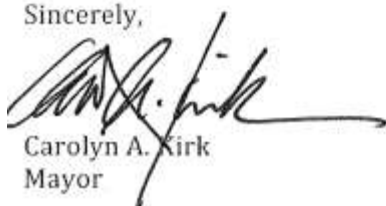
The U.S. Atlantic Spiny Dogfish fishery is a prime example of a successful wild-caught fishery whose sustainability is due in large part to compliance with the 10 National Standards of the *Magnuson-Stevens Act* (MSA). The U.S. Atlantic Spiny Dogfish fishery is harvested under a science-based fishery management plan designed around the 10 National Standards that include sustainable harvest rates and ecosystem-based conservation requirements to minimize by catch and habitat impacts and address social economic impacts. This science-based management process has been evolving since 1976 when the MSA was enacted and eight regional Fishery Management Councils were established to help NMFS manage fisheries based on peer reviewed science of the agency. Most rating and certification programs in the United States, including certification by MSC, are premised on the data provided by NMFS. The data on the U.S. Atlantic Spiny Dogfish is updated quarterly at: www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm

Conclusion:

The City of Gloucester encourages MSC to certify the U.S. Atlantic Spiny Dogfish as sustainable because it meets all of the MSC Principles and Criteria for Sustainable Fishing.

Thank you for the opportunity to comment.

Sincerely,



Carolyn A. Kirk
Mayor

City of New Bedford



CITY OF NEW BEDFORD

JONATHAN F. MITCHELL, MAYOR

March 20, 2012

Ian Scott
Intertek Moody Marine
99 Wyse Road, Suite 815
Dartmouth, Nova Scotia B3A 4S5
Canada

Re: Marine Stewardship Council certification of the U.S. Atlantic Spiny Dogfish fishery

Dear Mr. Scott:

The city of New Bedford is submitting the following comments in support of certification by the Marine Stewardship Council ("MSC") that the U.S. Atlantic Spiny Dogfish fishery is sustainable.

New Bedford is a primary stakeholder in the U.S. Atlantic Spiny Dogfish fishery and has a vested interest in the continued success of the fishery as a sustainable resource. The city is proud of its long history as one of the top commercial fishing ports in the world. There are nearly 300 people whose jobs are directly tied to the U.S. Atlantic Spiny Dogfish fishery at three seafood processing facilities in New Bedford. Hundreds more make their living working on commercial fishing vessels that harvest U.S. Atlantic Spiny Dogfish and call New Bedford their home port. Equally important are the hundreds of people employed by companies that provide goods and services to the seafood processing facilities and the fleet in New Bedford, including ice, fuel, gear, provisions, packaging, and transportation.

New Bedford is also home to the School for Marine Science and Technology (SMAST) at the University of Massachusetts Dartmouth. SMAST is a world-class institution whose faculty have expertise in ocean modeling and monitoring, fisheries science and management, coastal systems science, ocean acoustics, biogeochemistry, remote sensing, and ocean engineering.

It is the city's opinion that the U.S. Atlantic Spiny Dogfish fishery meets all of the MSC Principles and Criteria for Sustainable Fishing.

Regarding Principle 1:

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

The U.S. Atlantic Spiny Dogfish fishery is conducted in a manner that does not lead to over-fishing or depletion of the exploited populations. Support for this conclusion is found at

http://www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm, which states: “The Atlantic spiny dogfish population has been rebuilt and is currently harvested at a sustainable rate.” The National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (“NMFS”) also concludes that the ‘Sustainability Status’ of the U.S. Atlantic Spiny Dogfish is that it is not overfished and that overfishing is not occurring.

Regarding Principle 2:

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Fishing operations in the U.S. Atlantic Spiny Dogfish fishery allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. This is true in large part because the Mid-Atlantic and New England Fishery Management Councils have a joint fishery management plan (“Dogfish FMP”) to regulate fishing operations and set an annual quota for U.S. Atlantic Spiny Dogfish in federal waters. Also, the Atlantic States Marine Fisheries Commission works in collaboration with the Mid-Atlantic and New England Fishery Management Councils and manages U.S. Atlantic Spiny Dogfish fishing efforts in state waters. The Dogfish FMP is a prime example of the successful management of a fishery: when implemented in 2000, the annual quota was set to allow the stock to rebuild, and in 2010 NOAA declared the stock rebuilt. Additional support for the conclusion that Principle 2 has been met may be found at www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm.

Regarding Principle 3:

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.


The U.S. Atlantic Spiny Dogfish fishery is a prime example of a successful wild-caught fishery whose sustainability is due in large part to compliance with the 10 National Standards of the *Magnuson-Stevens Act* (MSA). The U.S. Atlantic Spiny Dogfish fishery is harvested under a science-based fishery management plan designed around the 10 National Standards that include sustainable harvest rates and ecosystem-based conservation requirements to minimize bycatch and habitat impacts and address social economic impacts. This science-based management process has been evolving since 1976, when the MSA was enacted and eight regional Fishery Management Councils were established to help NMFS manage fisheries based on peer reviewed science of the agency. Most rating and certification programs in the United States, including certification by MSC, are premised on the data provided by NMFS. The data on the U.S. Atlantic Spiny Dogfish is updated quarterly at: www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm

Conclusion:

New Bedford encourages MSC to certify the U.S. Atlantic Spiny Dogfish as sustainable because it meets all of the MSC Principles and Criteria for Sustainable Fishing.

Thank you for the opportunity to comment.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jon Mitchell', is written over the printed name and title.

Jon Mitchell
Mayor

Maine Coast Fishermen's Association



MAINE COAST FISHERMEN'S ASSOCIATION

Post Office Box 112
Topsham, ME 04086
Phone: 207.619.1755
Fax 866.876.3564

August 21, 2012

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Intertek Moody Marine
99 Wyse Road, Suite 815
Dartmouth, Nova Scotia B3A 4S5
Canada

Re: Marine Stewardship Council certification of the U.S. Atlantic Spiny Dogfish fishery

Dear Mr. Scott:

The Maine Coast Fishermen's Association (MCFA) is submitting the following comments in support of certification by the Marine Stewardship Council ("MSC") that the U.S. Atlantic Spiny Dogfish fishery be deemed sustainable. MCFA identifies and fosters ways to restore the fisheries of the Gulf of Maine and sustain Maine's historic fishing communities for future generations. The Association works to enhance the ecological and financial sustainability of the fishery through balancing the needs of the current generation of fishermen with the long term restoration of the Gulf of Maine. While many of our fisheries are in various states of rebuilding, which severely limit our fishermen's ability to have profitable businesses, the status of the Spiny Dogfish is not in doubt. There are more Spiny Dogfish in the Gulf of Maine than at any point in recent history and it is important to create value added fisheries for our businesses to target, that are sustainable for the long term.

It is the opinion of the Maine Coast Fishermen's Association that the U.S. Atlantic Spiny Dogfish fishery meets all of the MSC Principles and Criteria for Sustainable Fishing.

Regarding Principle 1:

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

The U.S. Atlantic Spiny Dogfish fishery is conducted in a manner that does not lead to over-fishing or depletion of the exploited populations. Support for this conclusion is found at http://www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm, which states "The Atlantic spiny dogfish population has been rebuilt and is currently harvested at a sustainable rate." The National Oceanic and Atmospheric Administration's National Marine Fisheries Service ("NMFS") also concludes the 'Sustainability Status' of the U.S. Atlantic Spiny Dogfish is that it is not overfished and overfishing is not occurring.



Regarding Principle 2:

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Fishing operations in the U.S. Atlantic Spiny Dogfish fishery allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. This is true in large part because the Mid-Atlantic and New England Fishery Management Councils have a joint fishery management plan ("Dogfish FMP") to regulate fishing operations and set an annual quota for U.S. Atlantic Spiny Dogfish in federal waters. Also, the Atlantic States Marine Fisheries Commission works in collaboration with the Mid-Atlantic and New England Fishery Management Councils and manages U.S. Atlantic Spiny Dogfish fishing efforts in state waters. The Dogfish FMP is a prime example of the successful management of a fishery: when implemented in 2000, the annual quota was set to allow the stock to rebuild and in 2010 NOAA declared the stock rebuilt. Additional support for the conclusion that Principle 2 has been met may be found at www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm.

Regarding Principle 3:

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

The U.S. Atlantic Spiny Dogfish fishery is a prime example of a successful wild-caught fishery whose sustainability is due in large part to compliance with the 10 National Standards of the *Magnuson-Stevens Act* (MSA). The U.S. Atlantic Spiny Dogfish fishery is harvested under a science-based fishery management plan designed around the 10 National Standards that include sustainable harvest rates and ecosystem-based conservation requirements to minimize bycatch and habitat impacts and address social economic impacts. This science-based management process has been evolving since 1976 when the MSA was enacted and eight regional Fishery Management Councils were established to help NMFS manage fisheries based on peer reviewed science of the agency. Most rating and certification programs in the United States, including certification by MSC, are premised on the data provided by NMFS. The data on the U.S. Atlantic Spiny Dogfish is updated quarterly at: www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm

Conclusion:

Maine Coast Fishermen's Association encourages MSC to certify the U.S. Atlantic Spiny Dogfish as sustainable as it meets all of the MSC Principles and Criteria for Sustainable Fishing.

Thank you for the opportunity to comment.

Sincerely,

Ben Martens
Executive Director
Maine Coast Fishermen's Association
PO Box 112
Topsham, ME 04086
207-619-1755
ben@midcoastfishermen.org

Cc: J. Whiteside, Jr., Esq.

Marine Stewardship Council



Marine House
1 Snow Hill
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SUBJECT: MSC Review and Report on Compliance with the scheme requirements

Dear Ian Scott

Please find below the results of our partial review of compliance with scheme requirements.

CAB	Intertek Moody Marine
Lead Auditor	Ian Scott
Fishery Name	US Atlantic spiny dogfish
Document Reviewed	Public Comment Draft Report Posted

Ref	Type	Page	Requirement	Reference	Details
TO.246	Major	69	CR-V1.2-CB3.5.2	The team shall determine and justify which species are considered 'main' and which are not.	<p>The justification for which species are considered 'main' species in P2 is not consistent with the UoCs defined for assessment. To certify a fishery to bear the ecolabel it is necessary to consider all retained catch and bycatch associated with the UoC targeted catch. The definition of the fishery used in 6.1.5 does not include all the fishing operations catching spiny dogfish assessed in P1 for use with the MSC ecolabel.</p> <p>It may be appropriate to revisit P2 scores considering information from all fishing operations from which spiny dogfish is being assessed for certification. Is there evidence no other 'main' species would be identified by including this information?</p>

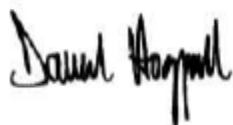
www.msc.org				Marine Stewardship Council	
TO.249	Major	160	CR-V1.1-27.10.6.1	Rationale shall be presented to support the team's conclusion.	<p>For PI 1.2.3 and 3.2.3 the rationale does not support the score given.</p> <p>It is not clear what proportion of the spiny dogfish fishery operating in state waters (from which the majority of catches are now taken) operate with a state licence as opposed to a federal licence. The report highlights the lack of observer coverage and trip reporting from state registered vessels. This information may provide additional justification to scoring of Pis in Principles 1 and 2.</p> <p>Estimates of discards and discard mortality rely on observer data only available from federal licenced vessels.</p> <p>Additional rationale for PI 3.2.3 in the state UoCs is needed to understand the scoring. Other PI rationales for state UoCs should be reviewed to ensure rationale is provided to support the scores.</p>
TO.250	Major		CR-V1.1-27.15.3.3	<p>BABs shall include the following in a separate section or appendix to the Public Comment Draft Report: Explicit responses from the team to submissions described in 27.15.3.1 and 27.15.3.2.</p> <p>a. The CAB shall have sent these responses to the stakeholders prior to their publication in the public comment draft report.</p>	<p>Responses from the team to submissions described in 27.15.3.1 and 27.15.3.2. were included in the report. These were not explicit and did not address how the concerns of the stakeholders had been addressed in the PCDR.</p> <p>For example, in the submission made by Shark Advocates International, it was cited that the spiny dogfish quota has been substantially exceeded in three of the past five years. It is not clear from the report whether this is the case and if so whether this has been considered in the scoring of the fishery.</p>
TO.251	Major		CR-V1.1-CB3.5.5	The team shall consider species used as bait in a fishery, if they are caught by the fishery under assessment or elsewhere under the Retained Species component in P2.	<p>Bait used in the fishery should be scored under the retained species component.</p> <p>There is no reference made to the bait used in the longline UoCs having been considered in the assessment.</p>

www.msc.org				Marine Stewardship Council	
TO.254	Major	113	CR-V1.1-27.12.1.5	The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products: Any transshipment activities taking place.	The report does not define the systems of tracking and tracing to be used when transshipment does occur, even though it states transshipment is less likely.
TO.255	Major	113	CR-V1.1-27.12.1.6	The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products: The number and/or location of points of landing.	The report does not define the points of landing or at least the status of these ports e.g. registered to the various states, nor are the list of states yet available in Annex 6.
TO.256	Major	113	CR-V1.1-27.12.1.3	The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products. The opportunity of substitution of certified with non-certified fish prior or at landing.	The report identifies there will be 'systems required to reduce the risk of certified SD being contaminated by non-certified product' but does not define what these systems are or where the particular risks are.
TO.258	Major	113	CR-V1.1-27.12.1	The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products.	The report does not provide a list of eligible vessels (with the reference to Appendix 6 being currently blank), or details on what constitutes an eligible vessel. Official records of vessels are mentioned, but without a link to where or what this is.

www.msc.org				Marine Stewardship Council
TO.248	Guidance		NA	<p>The Gulf of Maine stock assessment, available at the end of 2011, may include significant new information relevant to the scoring of P2 retained species indicators. It would be reasonable to assess this information for relevance to this assessment now.</p> <p>It is noted that information on Atlantic sturgeon made available in Jan 2012 has been included in the assessment.</p> <p>Not considering this information now may mean an expedited audit becomes necessary.</p>
TO.253	Guidance	113	NA	<p>There are many typographical in some sections of this report. For example, within section 12.1 on traceability. Second bullet 'tyat' instead of 'that'. Fifth bullet 'theb' instead of 'the'. Sixth bullet 'peoduct' instead of 'product'. Seventh bullet "delaer" instead of "dealer". 12.2 first paragraph "palces" instead of "places".</p> <p>The report would benefit form further proof reading.</p>
TO.259	Guidance	113	CR-V1.1-27.12.1.2	<p>The possibility of vessels fishing outside the unit of certification.</p> <p>The report highlights that 5% of total landings may be from outside of the UoC, and also that other gear types are in use that catch SD, but does not explain how the non-certified-gear-caught catch will be kept separate from UoC product, or if UoC vessels can carry non-certified gear in the same trips, and if so how this risk is managed.</p>
TO.260	Guidance	62	NA	<p>Heading 'Observer Program' on Pg 62 then Section 5.3.4 Research Plan below suggests some text may have been omitted.</p>

www.msc.org			Marine Stewardship Council	
TO.261	Guidance	Client Action Plan	CR-V1.1-27.11.3.1	<p>27.11.3: The CAB shall not accept a client action plan if the client is relying upon the involvement, funding and/or resources of other entities (fisheries management or research agencies, authorities or regulating bodies that might have authority, power or control over management arrangements, research budgets and/or priorities) without:</p> <p>27.11.3.1 Consulting with those entities when setting conditions, if those conditions are likely to require any or all of the following:</p> <ul style="list-style-type: none"> a. Investment of time or money by these entities. b. Changes to management arrangements or regulations. c. Re-arrangement of research priorities by these entities.
				Some MSC assessment reports include documentary evidence that consultation on conditions has been agreed by the relevant management agencies. This can be useful for stakeholders.

This report is provided for action by the CAB and ASI in order to improve consistency with the MSC scheme requirements; MSC does not review all work products submitted by Conformity Assessment Bodies and this review should not be considered a checking service. If any clarification is required, please contact Suzi Keshavarz on 020 7246 8935 for more information.



Best regards,
 Dan Hoggarth
 Fisheries Oversight Director
 Marine Stewardship Council

cc: Accreditation Services International

Massachusetts Division of Marine Fisheries



Paul J. DiDatt
Director

Commonwealth of Massachusetts

Division of Marine Fisheries

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(617)626-1520
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Deval Patrick
Governor
Timothy P. Murray
Lt. Governor
Richard K. Sullivan, Jr.
Secretary
Mary B. Griffin
Commissioner

March 27, 2012

Ian Scott
Intertek Moody Marine
99 Wyse Road, Suite 815
Dartmouth, Nova Scotia B3A 4S5
Canada

Via e-mail: ian.scott@intertek.com

Dear Mr. Scott:

The Commonwealth's Division of Marine Fisheries (DMF) supports certification of the U.S. Atlantic Spiny Dogfish Fishery by the Marine Stewardship Council (MSC). Being the state where the majority of spiny dogfish landings occurs and the agency that has been in the forefront of Council and Atlantic States Marine Fisheries Commission (ASMFC) efforts to create and maintain a sustainable fishery for spiny dogfish, we are perhaps in the best position to appreciate and critique the industry's efforts to obtain MSC certification.

An excellent example of the industry's promotion of sustainability is its recent support of a lower dogfish quota for the coming fishing year. Even though a higher quota was scientifically justifiable and conservative, dogfish processors in Massachusetts and New Hampshire preferred an even lower quota. This preference convinced ASMFC to adopt a lower even more conservative amount.

Another example of industry responsibility is provided by cooperative research recently published in the journal *Fisheries Research* (114, February 2012). Collaborative work between DMF Conservation Engineering scientists and fishermen is described in their paper "Development and observations of a spiny dogfish *Squalus acanthias* reduction device in raised footrope silver hake *Merluccius bilinearis* trawl." Recognizing the need to reduce bycatch of dogfish in the silver hake fishery of Massachusetts Bay, these researchers developed gear reducing spiny dogfish catch, increasing the quality of marketable silver hake catches, reduced non-target species mortality, and decreased codend catch handling times. We anticipate many silver hake fishermen will embrace this gear to avoid ubiquitous dogfish.

With spiny dogfish being rebuilt to our target biomass, and with there being no overfishing we consider the future to be quite bright for this fishery. All stock size and fishing mortality projections make us very optimistic. In fact, fishing mortality is far below the level defining overfishing.

Careful and conservative management of dogfish for at least the last decade and a bit more by the Councils and ASMFC has yielded expected results. Certification will be a well-deserved reward for the industry's attention to spiny dogfish state and federal management tied to rebuilding and sustainability.

Both the New England and Mid-Atlantic Councils have written you to prove their support for certification. The Councils and ASMFC appreciate that with MSC certification comes increased industry responsibility and the need for continued good stewardship. Certification should make it easier for state and federal managers to secure whatever industry support is needed for fisheries management approaches indirectly or directly benefiting sustainability of the dogfish fishery.

DMF continues to work with processors and fishermen to improve reporting and fishing practices for dogfish. We and the industry also continue to urge continued research and increased understanding of dogfish predator-prey relationships especially the impact of dogfish on state and federal rebuilding efforts for groundfish and sea herring.

We conclude there will be continued adherence to MSC principles. Your periodic review of the fishery and its management will bear that out.

Thanks for all the effort you have devoted to this important MSC process. We look forward to MSC certification and all the benefits it provides.

Sincerely yours,



David E. Pierce, Ph.D.
Deputy Director

cc: Paul Diodati, Director
Massachusetts Marine Fisheries Advisory Commission
ASMFC
NEMFC
MAFMC

Massachusetts Lobstermen's Association

August 21, 2012

Ian Scott

Intertek Moody Marine

99 Wyse Road, Suite 815

Dartmouth, Nova Scotia B3A 4S5

Canada

Re: Marine Stewardship Council certification of the U.S. Atlantic Spiny Dogfish fishery

Dear Mr. Scott:

The Massachusetts Lobstermen's Association is submitting the following comments in support of certification by the Marine Stewardship Council ("MSC") that the U.S. Atlantic Spiny Dogfish fishery is sustainable.

It is the opinion of the Massachusetts Lobstermen's Association that the U.S. Atlantic Spiny Dogfish fishery meets all of the MSC Principles and Criteria for Sustainable Fishing.

Regarding Principle 1:

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

The U.S. Atlantic Spiny Dogfish fishery is conducted in a manner that does not lead to over-fishing or depletion of the exploited populations. Support for this conclusion is found at http://www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm, which states "The Atlantic spiny dogfish population has been rebuilt and is currently harvested at a sustainable rate." The National Oceanic and Atmospheric Administration's National Marine Fisheries Service ("NMFS") also concludes the 'Sustainability Status' of the U.S. Atlantic Spiny Dogfish is that it is not overfished and overfishing is not occurring.

Regarding Principle 2:

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Fishing operations in the U.S. Atlantic Spiny Dogfish fishery allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. This is true in large part because the Mid-Atlantic and New England Fishery Management Councils have a joint fishery management plan ("Dogfish FMP") to regulate fishing operations and set an annual quota for U.S. Atlantic Spiny Dogfish in federal waters. Also, the Atlantic States Marine Fisheries Commission works in collaboration with the Mid-Atlantic and New England Fishery Management Councils and manages U.S. Atlantic Spiny Dogfish fishing efforts in state waters. The Dogfish FMP is a prime example of the successful management of a fishery: when implemented in 2000, the annual quota was set to allow the stock to rebuild and in 2010 NOAA declared the stock rebuilt. Additional support for the conclusion that Principle 2 has been met may be found at www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm.

Regarding Principle 3:

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

The U.S. Atlantic Spiny Dogfish fishery is a prime example of a successful wild-caught fishery whose sustainability is due in large part to compliance with the 10 National Standards of the *Magnuson-Stevens Act* (MSA). The U.S. Atlantic Spiny Dogfish fishery is harvested under a science-based fishery management plan designed around the 10 National Standards that include sustainable harvest rates and ecosystem-based conservation requirements to minimize bycatch and habitat impacts and address social economic impacts. This science-based management process has been evolving since 1976 when the MSA was enacted and eight regional Fishery Management Councils were established to help NMFS manage fisheries based on peer reviewed science of the agency. Most rating and certification programs in the United States, including certification by MSC, are premised on the data provided by NMFS. The data on the U.S. Atlantic Spiny Dogfish is updated quarterly at: www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm

Conclusion:

The Massachusetts Lobstermen's Association encourages MSC to certify the U.S. Atlantic Spiny Dogfish as sustainable because it meets all of the MSC Principles and Criteria for Sustainable Fishing.

Thank you for the opportunity to comment.

Regards,

William Adler

William Adler

Executive Director

Massachusetts Lobstermen's Association

bill.adler@lobstermen.com

Cc: J. Whiteside, Jr., Esq.

Mid-Atlantic Fishery Management Council

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

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Christopher M. Moore, Ph.D.
Executive Director

March 14, 2012

Ian Scott
Intertek Moody Marine
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Canada

Dear Mr. Scott,

The Mid-Atlantic Fishery Management Council (Council) has been asked to support MSC certification of the U.S. Atlantic spiny dogfish fishery. The Council has lead responsibility for the Federal Spiny Dogfish Fishery Management Plan (FMP) and was one of several fishery management entities consulted during the audit/assessment of the U.S. Atlantic spiny dogfish fishery. During your site visit and subsequent follow up communications, MAFMC staff shared information about the fishery which is used in the preparation of documents that support that plan. This information is annually reviewed by the National Marine Fisheries Service (NMFS) in the course of setting management measures for spiny dogfish. NMFS accepts our management documents only after determining that the statements, conclusions, and recommended actions contained therein are consistent with the mandates of the Magnuson-Stevens Act (MSA) as well as many other Federal requirements.

In 2000, when the Council was given responsibility for managing the fishery, the stock was determined to be overfished. The Council quickly developed stringent management restrictions to curtail excessive harvest and, in 2010, the fishery was determined to be rebuilt. We maintain that the recovery and current/continued sustainable management of the spiny dogfish stock was accomplished because of the Council's consistent adherence to the principles of sustainable management as set forth in the MSA.

Additionally, as part of the Council's annual review of the fishery, we evaluate the impacts of the fishery on habitat, including Essential Fish Habitat, both for the managed species and other stocks within its geographic range. The Council has consistently concluded, and NMFS has agreed, that the impacts of the federal spiny dogfish fishery on EFH are "minimal and temporary in nature" and not at a level requiring mitigation. Evaluation of the impacts of the fishery on non-target species, including protected resources, has likewise found those impacts to be non-significant. To the extent that any significant interaction is determined, numerous federal statutes (e.g., MSA, MMPA, ESA) will require the imposition of restrictions to minimize those interactions.

As a regulatory instrumentality, the Council cannot provide an endorsement for MSC certification. However, we appreciate being consulted as part of the MSC process and believe that the federal spiny dogfish fishery is being managed in a manner consistent with the MSC Principles for a sustainable fishery.

Please contact me if you have any questions.

Sincerely,



Christopher M. Moore
Executive Director

cc: L. Anderson, J. Armstrong, F. Munden, R. Robins

National Association of Charterboat Operators



National Association of Charterboat Operators

P.O. Box 2990 Orange Beach, AL 36561

Phone (251-981-5136) Fax (251-981-8191)

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Bobbi M. Walker
Executive Director

Bob Zales, II
*Panama City Boatman Association
President*

Ed O'Brien
*Maryland Charter Boat Association
First vice-president*

Tom Becker
*Mississippi Charter Boat Captains
Second vice-president*

Gary Krein
*Charterboat Assoc. of Puget Sound
Secretary*

Ron Maglio
*Michigan City Charter Boat Assoc.
Treasurer*

Member Associations :

Alaska Charter Association
Beach Haven Charter Fishing Association
Cape Cod Charter Boat Association
Captree Boatman Open & Charter Boats
Charterboat Association of Puget Sound
Chicago Sportfishing Association
Coastal Bend Guides Association
Deep Creek Charterboat Association
Destin Charterboat Association
Eastern Lake Erie Charter Boat Assoc.
Florida Guides Association, Inc.
Genesee Charterboat Association, Inc.
Golden Gate Fishermen's Association
Greater Point Pleasant Charter Boat Assoc.
Hawaii Fishing & Boating Association
Homer (AK) Charter Association
Indiana's North Coast Charter Association
Islamorada Charterboat Association
Kenosha (WI) Charter Boat Association
Maine Association of Charterboat Captains
Marco Island Charter Captains Assoc.
Maryland Charterboat Association
Michigan City Charter Boat Association
Mississippi Charterboat Captains Assoc.
Northeast Charterboat Captains Assoc.
Northern Neck Charter Captains
Panama City Boatmen Association
Petersburg (AK) Charterboat Association
Port Aransas (TX) Boatmen, Inc.
Prince William Sound Charter Boat Assoc.
Seward Charterboat Association
Sitka (AK) Charter Boat Operators Assoc.
United Boatmen of New Jersey
Virginia Charter Boat Association
Waukegan Charter Boat Association
Westport Charterboat Association

March 30, 2012

Ian Scott
Intertek Moody Marine
99 Wyse Road, Suite 815
Dartmouth, Nova Scotia B3A 4S5
Canada

Re: Marine Stewardship Council certification of the U.S. Atlantic Spiny Dogfish fishery

Dear Mr. Scott:

The National Association of Charterboat Operators is submitting the following comments in support of certification by the Marine Stewardship Council ("MSC") that the U.S. Atlantic Spiny Dogfish fishery is sustainable.

It is the opinion of the National Association of Charterboat Operators that the U.S. Atlantic Spiny Dogfish fishery meets all of the MSC Principles and Criteria for Sustainable Fishing.

Regarding Principle 1:

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

The U.S. Atlantic Spiny Dogfish fishery is conducted in a manner that does not lead to over-fishing or depletion of the exploited populations. Support for this conclusion is found at http://www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm, which states "The Atlantic spiny dogfish population has been rebuilt and is currently harvested at a sustainable rate." The National Oceanic and Atmospheric Administration's National Marine Fisheries Service ("NMFS") also concludes the 'Sustainability Status' of the U.S. Atlantic Spiny Dogfish is that it is not overfished and overfishing is not occurring.

Regarding Principle 2:

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Fishing operations in the U.S. Atlantic Spiny Dogfish fishery allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. This is true in large part because the Mid-Atlantic and New England Fishery Management Councils have a joint fishery management plan ("Dogfish FMP") to regulate fishing operations and set an annual quota for U.S. Atlantic Spiny Dogfish in federal waters. Also, the Atlantic States Marine Fisheries Commission works in collaboration with the Mid-Atlantic and New England Fishery Management Councils and manages U.S. Atlantic Spiny Dogfish fishing efforts in state waters. The Dogfish FMP is a prime example of the successful management of a fishery: when implemented in 2000, the annual quota was set to allow the stock to rebuild and in 2010 NOAA declared the stock rebuilt. Additional support for the conclusion that Principle 2 has been met may be found at www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm.

Page 2 of 2 NACO

Regarding Principle 3:

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

The U.S. Atlantic Spiny Dogfish fishery is a prime example of a successful wild-caught fishery whose sustainability is due in large part to compliance with the 10 National Standards of the Magnuson-Stevens Act (MSA). The U.S. Atlantic Spiny Dogfish fishery is harvested under a science-based fishery management plan designed around the 10 National Standards that include sustainable harvest rates and ecosystem-based conservation requirements to minimize bycatch and habitat impacts and address social economic impacts. This science-based management process has been evolving since 1976 when the MSA was enacted and eight regional Fishery Management Councils were established to help NMFS manage fisheries based on peer reviewed science of the agency. Most rating and certification programs in the United States, including certification by MSC, are premised on the data provided by NMFS. The data on the U.S. Atlantic Spiny Dogfish is updated quarterly at: www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm

Conclusion:

The National Association of Charterboat Operators encourages MSC to certify the U.S. Atlantic Spiny Dogfish as sustainable because it meets all of the MSC Principles and Criteria for Sustainable Fishing.

Thank you for the opportunity to comment.

Regards,

Bob Zales, II

Captain Bob Zales, II
President
National Association of Charterboat Operators
P.O. Box 2990
Orange Beach, AL 36561
bobzales@att.net

Cc: J. Whiteside, Jr., Esq.

National Oceanic and Atmospheric Administration

MAR 16 2012



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
1315 East-West Highway
Silver Spring, Maryland 20910
THE DIRECTOR

Mr. John F. Whiteside, Jr.
General Counsel
Sustainable Fisheries Association
30 Cornell Street
New Bedford, MA 02740

Dear Mr. Whiteside:

I understand you are going through a Marine Stewardship Council certification process for the Spiny Dogfish fishery. We are pleased to provide you some background information on Spiny Dogfish, a marine species harvested in the waters off the New England and Mid-Atlantic coasts through our fishery management plans designed to ensure sustainable use. NOAA Fisheries Service, and our Fishery Management Council and state partners, are committed to ensuring the sustainability of the U.S. Atlantic Spiny Dogfish fishery.

U.S. Atlantic Spiny Dogfish are distributed in the western North Atlantic from Labrador to Florida. Although previously overfished, the fishery was declared rebuilt in 2010, harvest levels have increased from 12 million pounds in 2009 to 20 million pounds in 2011, and the commercial quota is proposed to be 35.7 million pounds for fishing year 2012. Based on the most recent scientific information, NOAA Fisheries considers the U.S. Atlantic Spiny Dogfish fishery to be sustainably managed in accordance with applicable laws and regulations for sustainable harvest. The stock is currently at a level that supports sustainable fishing, and no overfishing is occurring.

The U.S. Atlantic Spiny Dogfish fishery is a prime example of a successful wild-caught fishery whose sustainability is due in large part to compliance with the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The U.S. Atlantic Spiny Dogfish fishery is harvested under a science-based fishery management plan designed around the 10 National Standards of the MSA that include sustainable harvest rates and ecosystem-based conservation requirements to minimize bycatch and habitat impacts and address social and economic impacts. This science-based management process has been evolving since 1976 when the MSA was enacted and eight regional Fishery Management Councils were established to help NOAA's Fisheries Service manage fisheries based on peer-reviewed science of the agency.

In closing, information about U.S. fisheries management and the status of important seafood species harvested under this process are updated quarterly and provided on www.FishWatch.gov.

Sincerely,



Samuel D. Rauch III
Acting Assistant Administrator
for Fisheries

cc: John Connelly, National Fisheries Institute



New England Fishery Management Council**New England Fishery Management Council**

50 WATER STREET | NEWBURYPORT, MASSACHUSETTS 01950 | PHONE 978 465 0492 | FAX 978 465 3116
C.M. "Rip" Cunningham, Jr., *Chairman* | Paul J. Howard, *Executive Director*

March 13, 2012

Ian Scott
Intertek Moody Marine
99 Wyse Road, Suite 815
Dartmouth, Nova Scotia B3A 4S5
Canada

Re: Marine Stewardship Council certification of the U.S. Atlantic Spiny Dogfish fishery

Dear Mr. Scott:

The New England Fishery Management Council is submitting the following comments in support of certification by the Marine Stewardship Council ("MSC") that the U.S. Atlantic Spiny Dogfish fishery is sustainable.

It is the opinion of the New England Fishery Management Council that the U.S. Atlantic Spiny Dogfish fishery meets the three MSC Principles and Criteria for Sustainable Fishing.

Regarding Principle 1:

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

The U.S. Atlantic Spiny Dogfish fishery is conducted in a manner that does not lead to over-fishing or depletion of the exploited populations. Support for this conclusion is found at http://www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm, which states "The Atlantic spiny dogfish population has been rebuilt and is currently harvested at a sustainable rate." The National Oceanic and Atmospheric Administration's National Marine Fisheries Service ("NMFS") also concludes the 'Sustainability Status' of the U.S. Atlantic Spiny Dogfish is that it is not overfished and overfishing is not occurring.

Regarding Principle 2:

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Fishing operations in the U.S. Atlantic Spiny Dogfish fishery allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. This is true in large part because the Mid-Atlantic and New England Fishery Management Councils have a joint fishery

management plan ("Dogfish FMP") to regulate fishing operations and set an annual quota for U.S. Atlantic Spiny Dogfish in federal waters. Also, the Atlantic States Marine Fisheries Commission works in collaboration with the Mid-Atlantic and New England Fishery Management Councils and manages U.S. Atlantic Spiny Dogfish fishing efforts in state waters. The Dogfish FMP is a prime example of the successful management of a fishery: when implemented in 2000, the annual quota was set to allow the stock to rebuild and in 2010 NOAA declared the stock rebuilt. Additional support for the conclusion that Principle 2 has been met may be found at www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm.

Regarding Principle 3:

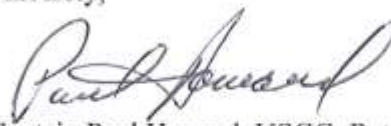
The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

The U.S. Atlantic Spiny Dogfish fishery is a prime example of a successful wild-caught fishery whose sustainability is due in large part to compliance with the 10 National Standards of the *Magnuson-Stevens Act* (MSA). The U.S. Atlantic Spiny Dogfish fishery is harvested under a science-based fishery management plan designed around the 10 National Standards that include sustainable harvest rates and ecosystem-based conservation requirements to minimize bycatch and habitat impacts and address social economic impacts. This science-based management process has been evolving since 1976 when the MSA was enacted and eight regional Fishery Management Councils were established to help NMFS manage fisheries based on peer reviewed science of the agency. Most rating and certification programs in the United States, including certification by MSC, are premised on the data provided by NMFS. The data on the U.S. Atlantic Spiny Dogfish is updated quarterly at: www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm

Conclusion:

Atlantic Spiny Dogfish is not overfished and overfishing is not occurring. Annual catch limits with accountability measures are in place to ensure its continued health and harvest at sustainable levels. Please don't hesitate to call me if you need any additional information in support of MSC certification for Atlantic Spiny Dogfish.

Sincerely,



Captain Paul Howard, USCG, Ret.
Executive Director
New England Fishery Management Council
50 Water Street, Mill 2
Newburyport, MA 01950
978-465-0492 ext. 103
phoward@nefmc.org

North Carolina Watermen United



March 14, 2012

Ian Scott
Intertek Moody Marine
99 Wyse Road, Suite 815
Dartmouth, Nova Scotia B3A 4S5
Canada

Re: Marine Stewardship Council Certification of the US Atlantic Spiny Dogfish Fishery

Dear Mr. Scott,

The North Carolina Watermen United organization is submitting the following comments in support of certification by the Marine Stewardship Council (MSC) that the US Atlantic Spiny Dogfish Fishery is sustainable.

It is the opinion of the North Carolina Watermen United organization that the US Atlantic Spiny Dogfish Fishery meets all of the MSC Principles and Criteria for Sustainable Fishing.

Regarding Principle 1:

A Fishery must be conducted in a manner that does not lead to overfishing or depletion of the exploited populations and, for those populations that are deplete, the Fishery must be conducted in a manner that demonstrably leads to their recovery.

The US Atlantic Spiny Dogfish Fishery is conducted in a manner that does not lead to over-fishing or depletion of the exploited populations. Support for this conclusion is found at www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm, which states "The Atlantic Spiny Dogfish population has been rebuilt and is currently harvested at a sustainable rate." The National Oceanic and Atmospheric Administration's National Marine Fisheries Service (NMFS) also concludes the "Sustainability Status" of the US Atlantic Spiny Dogfish is that it is not overfished and overfishing is not occurring.

Regarding principle 2:

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the Fishery depends.

Fishing operations in the US Atlantic Spiny Dogfish Fishery allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the Fishery depends. This is true in large part because the Mid-Atlantic and New England Fishery Management Councils have a joint fishery management plan (Dogfish FMP) to regulate fishing operations and set an annual quota for US Atlantic Spiny Dogfish in federal waters. Also, The Atlantic States Marine Fisheries Commission works in collaboration with the Mid-Atlantic and New England Fishery Management Councils and manages US Atlantic Spiny Dogfish fishing efforts in state waters. The Dogfish FMP is a prime example of the successful management of a fishery; when implemented in 2000, the annual quota was set to allow the stock to rebuild and in 2010, NOAA declared the stock rebuilt. Additional support for the conclusion that Principle 2 has been met may be found at www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm.

Regarding Principle 3:

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operation frameworks that require use of the resource to be responsible and sustainable.



The US Atlantic Spiny Dogfish Fishery is a prime example of a successful wild-caught fishery whose sustainability is due in large part to compliance with 10 National Standards of the *Magnuson-Stevens Act* (MSA). The US Atlantic Spiny Dogfish Fishery is harvested under a science-based fishery management plan designed around the 10 National Standards that include sustainable harvest rates and ecosystem-based conservation requirements to minimize bycatch and habitat impacts and address social economic impacts. This science-based management process has been evolving since 1976 when the MSA was enacted and eight Regional Fishery Management Councils were established to help NMFS manage fisheries based on peer-reviewed science of the agency. Most rating and certification programs in the United States, including certification by MSC, are premised on the data provided by NMFS. The data on the US Atlantic Spiny Dogfish is updated quarterly at: www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm.

Conclusion

The North Carolina Watermen United organization encourages MSC to certify the US Atlantic Spiny Dogfish as sustainable because it meets all of the MSC principles and Criteria for Sustainable Fishing.

Thank you for the opportunity to comment.

Yours truly,
Britt Shackelford
President, NCWU
PO Box 536
Hatteras, NC 27943
info@doghousesportfishing.com

BTS: mm
Cc: J. Whiteside, Jr., Esq

Northeast Fishery Sector III

III Northeast Fishery Sector Inc.
10 Withers Street
Grouseville, Massachusetts 01930

March 28, 2012

Mr. Ian Scott
Intertek Moody Marine
99 Wyse Road, Suite 815
Dartmouth, Nova Scotia B3A 4S5
Canada

Re: Marine Stewardship Council certification of the U.S. Atlantic Spiny Dogfish fishery

Dear Mr. Scott:

III Northeast Fishery Sector, Inc. ("NEFS III") is submitting the following comments in support of certification by the Marine Stewardship Council ("MSC") that the U.S. Atlantic Spiny Dogfish fishery is sustainable. During fishing year 2011, NEFS III members landed approximately 1.45 million pounds of U.S. Atlantic Spiny Dogfish.

It is the opinion of NEFS III that the U.S. Atlantic Spiny Dogfish fishery meets all of the MSC Principles and Criteria for Sustainable Fishing.

Regarding Principle 1:

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

The U.S. Atlantic Spiny Dogfish fishery is conducted in a manner that does not lead to over-fishing or depletion of the exploited populations. Support for this conclusion is found at http://www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm, which states "The Atlantic spiny dogfish population has been rebuilt and is currently harvested at a sustainable rate." The National Oceanic and Atmospheric Administration's National Marine Fisheries Service ("NMFS") also concludes the 'Sustainability Status' of the U.S. Atlantic Spiny Dogfish is that it is not overfished and overfishing is not occurring.

Regarding Principle 2:

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Fishing operations in the U.S. Atlantic Spiny Dogfish fishery allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. This is true in large part because the Mid-Atlantic and New England Fishery Management Councils have a joint fishery management plan ("Dogfish FMP") to regulate fishing operations and set an annual quota for U.S. Atlantic Spiny Dogfish in federal waters. Also, the Atlantic States Marine Fisheries Commission works in

collaboration with the Mid-Atlantic and New England Fishery Management Councils and manages U.S. Atlantic Spiny Dogfish fishing efforts in state waters. The Dogfish FMP is a prime example of the successful management of a fishery; when implemented in 2000, the annual quota was set to allow the stock to rebuild and in 2010 NOAA declared the stock rebuilt. Additional support for the conclusion that Principle 2 has been met may be found at www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm.

Regarding Principle 3:

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

The U.S. Atlantic Spiny Dogfish fishery is a prime example of a successful wild-caught fishery whose sustainability is due in large part to compliance with the 10 National Standards of the *Magnuson-Stevens Act* (MSA). The U.S. Atlantic Spiny Dogfish fishery is harvested under a science-based fishery management plan designed around the 10 National Standards that include sustainable harvest rates and ecosystem-based conservation requirements to minimize bycatch and habitat impacts and address social economic impacts. This science based management process has been evolving since 1976 when the MSA was enacted and eight regional Fishery Management Councils were established to help NMFS manage fisheries based on peer reviewed science of the agency. Most rating and certification programs in the United States, including certification by MSC, are premised on the data provided by NMFS. The data on the U.S. Atlantic Spiny Dogfish is updated quarterly at: www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm

Conclusion:

NEFS III encourages MSC to certify the U.S. Atlantic Spiny Dogfish as sustainable because it meets all of the MSC Principles and Criteria for Sustainable Fishing.

Thank you for the opportunity to comment.

Regards,

for 
Richard Burgess
President
III Northeast Fishery Sector, Inc.

Cc: J. Whiteside, Jr., Esq.
Nicolas Brancalione
Jackie Odell

Northeast Fishery Sector VII and VIII

**Northeast Fishery Sectors VII & VIII
114 MacArthur Dr
New Bedford, Ma 02740**

March 28, 2012

Ian Scott
Intertek Moody Marine
99 Wyse Road, Suite 815
Dartmouth, Nova Scotia B3A 4S5
Canada

Re: Marine Stewardship Council certification of the U.S. Atlantic Spiny Dogfish fishery

Dear Mr. Scott:

Northeast Fishery Sectors VII and VIII are submitting the following comments in support of certification by the Marine Stewardship Council ("MSC") that the U.S. Atlantic Spiny Dogfish fishery is sustainable.

It is the opinion of Northeast Fishery Sectors VII and VIII that the U.S. Atlantic Spiny Dogfish fishery meets all of the MSC Principles and Criteria for Sustainable Fishing.

Regarding Principle 1:

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

The U.S. Atlantic Spiny Dogfish fishery is conducted in a manner that does not lead to over-fishing or depletion of the exploited populations. Support for this conclusion is found at http://www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm, which states "The Atlantic spiny dogfish population has been rebuilt and is currently harvested at a sustainable rate." The National Oceanic and Atmospheric Administration's National Marine Fisheries Service ("NMFS") also concludes the 'Sustainability Status' of the U.S. Atlantic Spiny Dogfish is that it is not overfished and overfishing is not occurring.

Regarding Principle 2:

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Fishing operations in the U.S. Atlantic Spiny Dogfish fishery allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. This is true in large part because the Mid-Atlantic and New England Fishery Management Councils have a joint fishery management plan ("Dogfish FMP") to regulate fishing operations and set an annual quota for U.S. Atlantic Spiny Dogfish in federal waters. Also, the Atlantic States Marine Fisheries Commission works in

collaboration with the Mid-Atlantic and New England Fishery Management Councils and manages U.S. Atlantic Spiny Dogfish fishing efforts in state waters. The Dogfish FMP is a prime example of the successful management of a fishery: when implemented in 2000, the annual quota was set to allow the stock to rebuild and in 2010 NOAA declared the stock rebuilt. Additional support for the conclusion that Principle 2 has been met may be found at www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm.

Regarding Principle 3:

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

The U.S. Atlantic Spiny Dogfish fishery is a prime example of a successful wild-caught fishery whose sustainability is due in large part to compliance with the 10 National Standards of the *Magnuson-Stevens Act* (MSA). The U.S. Atlantic Spiny Dogfish fishery is harvested under a science-based fishery management plan designed around the 10 National Standards that include sustainable harvest rates and ecosystem-based conservation requirements to minimize bycatch and habitat impacts and address social economic impacts. This science-based management process has been evolving since 1976 when the MSA was enacted and eight regional Fishery Management Councils were established to help NMFS manage fisheries based on peer reviewed science of the agency. Most rating and certification programs in the United States, including certification by MSC, are premised on the data provided by NMFS. The data on the U.S. Atlantic Spiny Dogfish is updated quarterly at: www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm

Conclusion:

Northeast Fishery Sectors VII and VIII encourage MSC to certify the U.S. Atlantic Spiny Dogfish as sustainable because it meets all of the MSC Principles and Criteria for Sustainable Fishing.

Thank you for the opportunity to comment.

Regards,



Linda McCann

Sector Manager

Northeast Fishery Sectors VII and VIII

114 MacArthur Blvd.

New Bedford, MA 02740

(508) 984-0900

nbssector07@comcast.net

Cc: J. Whiteside, Jr., Esq.

NORTHEAST SEAFOOD COALITION

March 30, 2012

Ian Scott
Intertek Moody Marine
99 Wyse Road, Suite 815
Dartmouth, Nova Scotia B3A 4S5
Canada

Re: Marine Stewardship Council certification of the U.S. Atlantic Spiny Dogfish fishery

Dear Mr. Scott:

The Northeast Seafood Coalition (NSC) is submitting the following comments in support of certification by the Marine Stewardship Council (MSC) that the U.S. Atlantic Spiny Dogfish fishery is sustainable.

It is the opinion of NSC that the U.S. Atlantic Spiny Dogfish fishery meets all of the MSC Principles and Criteria for Sustainable Fishing.

Regarding Principle 1:

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted; the fishery must be conducted in a manner that demonstrably leads to their recovery.

The U.S. Atlantic Spiny Dogfish fishery is conducted in a manner that does not lead to over-fishing or depletion of the exploited populations. Support for this conclusion is found at http://www.nmfs.noaa.gov/fishwatch/species/atli_spiny_dogfish.htm, which states "The Atlantic spiny dogfish population has been rebuilt and is currently harvested at a sustainable rate." The National Oceanic and Atmospheric Administration's National Marine Fisheries Service ("NMFS") also concludes the 'Sustainability Status' of the U.S. Atlantic Spiny Dogfish is that it is not overfished and overfishing is not occurring.

Regarding Principle 2:

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Fishing operations in the U.S. Atlantic Spiny Dogfish fishery allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. This is true in large part because the Mid-Atlantic and New England Fishery Management Councils have a joint fishery management plan ("Dogfish FMP") to regulate fishing operations and set an annual quota for U.S. Atlantic Spiny Dogfish in federal waters. Also, the Atlantic States Marine Fisheries Commission works in collaboration with the Mid-Atlantic and New England Fishery Management Councils and manages U.S. Atlantic Spiny Dogfish

NORTHEAST SEAFOOD COALITION

fishing efforts in state waters. The Dogfish FMP is a prime example of the successful management of a fishery: when implemented in 2000, the annual quota was set to allow the stock to rebuild and in 2010 NOAA declared the stock rebuilt. Additional support for the conclusion that Principle 2 has been met may be found at www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm.

Regarding Principle 3:

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

The U.S. Atlantic Spiny Dogfish fishery is a prime example of a successful wild-caught fishery whose sustainability is due in large part to compliance with the 10 National Standards of the Magnuson-Stevens Act (MSA). The U.S. Atlantic Spiny Dogfish fishery is harvested under a science-based fishery management plan designed around the 10 National Standards that include sustainable harvest rates and ecosystem-based conservation requirements to minimize bycatch and habitat impacts and address social economic impacts. This science-based management process has been evolving since 1976 when the MSA was enacted and eight regional Fishery Management Councils were established to help NMFS manage fisheries based on peer reviewed science of the agency. Most rating and certification programs in the United States, including certification by MSC, are premised on the data provided by NMFS. The data on the U.S. Atlantic Spiny Dogfish is updated quarterly at: www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm

Conclusion:

The Northeast Seafood Coalition encourages MSC to certify the U.S. Atlantic Spiny Dogfish as sustainable because it meets all of the MSC Principles and Criteria for Sustainable Fishing.

Thank you for the opportunity to comment.

Regards,

Jackie Odell

Jackie Odell
Executive Director
Northeast Seafood Coalition
4 Parker St. Suite 102
Gloucester, MA 01930
Phone (978) 283-9992
Fax (978) 283-9959
jackie@northeastseafoodcoalition.org

Cc: J. Whiteside, Jr., Esq.

Shark Advocates International

March 30, 2012

Ian Scott
Intertek Moody Marine
Vuka Karadzica
81000 Podgorica
Montenegro



Dear Ian:

This letter represents our updated concerns with respect to the possible Marine Stewardship Council (MSC) certification of Northeast U.S. fisheries for spiny dogfish (*Squalus acanthias*).

I have done my best to review the nearly 300 page document prepared for this possible certification. I hope you and your colleagues can understand that it is difficult for small organizations to come up with the resources necessary to comprehend, navigate, properly respond to the complex MSC certification process. In general, I am not satisfied that the concerns I expressed last year have been adequately addressed in the public comment document, nor do I agree with the high scoring these fisheries have somehow achieved. I find it particularly perplexing that the gillnet fisheries can score so closely to fisheries using other gear, given the substantial associated bycatch problems.

Just as importantly, it seems as if the public comment document may have been finalized just before two major developments with respect to the status of fish species taken as bycatch or retained catch in the region's spiny dogfish fisheries:

- New results from an assessment of the Gulf of Maine cod stock, and
- The listing of Atlantic sturgeon under the U.S. Endangered Species Act.

I feel strongly that these factors warrant closer investigation and a re-evaluation of scoring.

NEW INFORMATION**Gulf of Maine Cod**

The latest assessment of Gulf of Maine cod (*Gadus morhua*) reveals that the stock is in a dramatically worse condition than expected. New England officials have recently reported:

- Population levels at about 20% of fully-rebuilt size
- Fishing rates nearly five times the overfishing level
- Very low biomass
- A 4-6 year delay in the rebuilding timeframe (from 2014 to perhaps 2020)
- Recruitment below the long-term (1982-2010) average since 2007
- Few fish older than age 9, in a stock with potential lifespan of roughly 20 years, and
- Contracted stock distribution as compared to the 1970s.

Officials note that revised cod management measures have not yet been formulated, but could include reductions in other fishing opportunities.

Based on the fact that cod are a major bycatch and retained catch for the dogfish fisheries in question, it seems that a re-evaluation of at least PI 2.1.1 is in order.

Atlantic sturgeon

The Federal Register notice announcing the listing of the Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) includes the following statements:

"Bycatch mortality for Atlantic sturgeon is known to occur predominantly in sink gillnet gear (Stein et al., 2004; ASMFC, 2007), and this gear type is used in the monkfish and spiny dogfish fisheries that occur in the Mid-Atlantic. Based on the mixed stock analysis results, a significant number of bycatch interactions occur in the Mid Atlantic Bight region (see Figure 1), and over 40 percent of these interactions were with fish from the NYB DPS and 20 percent were with fish from the CB DPS. Given that fish from these two DPSs are most likely to occur in the Mid Atlantic Bight region (e.g., in close proximity to their rivers of origin), they are highly susceptible to take as bycatch in fisheries.

Fish from the NYB and CB DPSs likely benefited from these effort control measures, because the amount of sink gillnets in Mid-Atlantic waters was reduced. However, monkfish is no longer overfished, and quota allocations for spiny dogfish have been increased. Therefore, as fish stocks are rebuilt, we anticipate that sink gillnet fishing effort will increase in the Mid-Atlantic. In addition, individual-based assignment and mixed stock analysis of samples collected from sturgeon captured in Canadian fisheries in the Bay of Fundy indicated that approximately 1-2% were from the NYB DPS, and perhaps 1% from the Chesapeake DPS (Wirgin et al., in draft). There are no current regulatory measures to address the bycatch threat to the NYB and CB DPSs of Atlantic sturgeon posed by U.S. Federal fisheries or fisheries that occur in Canadian waters."

"With respect to the CB DPS, the NEFSC analysis indicated that coastal waters south of the Chesapeake Bay to Cape Hatteras, NC, had the second highest number of observed Atlantic sturgeon captures in sink gillnet gear for 2001-2006 (ASMFC, 2007). A gillnet fishery for dogfish was known to incidentally catch sturgeon off Chincoteague Island, VA, where more than 30 dead Atlantic sturgeon were found (Virginia Marine Police and Virginia Marine Resources Commission, pers. comm.). Access to the spiny dogfish fishery is not limited, and directed effort in the fishery is expected to increase as stock rebuilding objectives are met (ASMFC, 2009). An increase in effort could result in increased levels of Atlantic sturgeon bycatch."

"Effort control measures were implemented to achieve rebuilding of groundfish, monkfish, and spiny dogfish and may have provided some indirect benefit to Atlantic sturgeon from the GOM DPS. However, as fish stocks are rebuilt, we anticipate that sink gillnet fishing effort will increase in the Gulf of Maine. In addition, individual-based assignment and mixed stock analysis of samples collected from sturgeon captured in Canadian fisheries in the Bay of Fundy indicated that approximately 35 percent were from the GOM DPS (Wirgin et al., in draft). There are no current regulatory measures to address the bycatch threat to GOM DPS Atlantic sturgeon posed by U.S. Federal fisheries or fisheries that occur in Canadian waters. As noted previously, studies have shown that Atlantic sturgeon can only sustain low levels of

bycatch and other anthropogenic mortality (e.g., vessel strikes) (Boreman, 1997; ASMFC, 2007; Kahnle et al., 2007; Brown and Murphy, 2010). Therefore, despite some management efforts and improvements, we concluded that the GOM DPS is at risk of becoming endangered in the foreseeable future throughout all of its range (i.e., is a threatened species) based on the following: (1) the persistence of some degree of threat from bycatch and habitat impacts from continued degraded water quality and dredging in some areas; (2) the likelihood of increased impact from existing threats; and, (3) the lack of measures to address these threats."

Given the precarious status of Atlantic sturgeon and the significant threat posed to this endangered species by spiny dogfish fisheries – at the very least – PIs 2.3.1, 2.3.2, and 2.3.3 should be re-evaluated.

I second the comments regarding concerns with scoring related to the bycatch of other threatened and protected species that have been submitted by the Humane Society of the United States. I also take this opportunity to reiterate most of the comments I made last year.

REITERATED CONCERNS

Many of my colleagues and I are concerned that the following factors associated with these dogfish fisheries make them exceptionally poor choices for the reward of an ecolabel, especially given the MSC's stated commitment to "never compromise on environmental standards":

- Species' inherent vulnerability (slow growth, lengthy gestation, few young)
- Practice of targeting schools of pregnant females (the largest individuals)
- Recruitment failure in the not too distant past due to serious, long-term overfishing
- Predicted decline in target population starting this year
- Truncated age structure
- Skewed sex ratio (significantly more males than females)
- Yet un-quantified effects of reduced size of reproductive females
- Bycatch of protected, prohibited, and overfished species
- Damage to habitat and/or discarded animals
- Disjointed state/Federal management plans
- Federal quota overages in three of past five years
- Lack of coordination with respect to Canadian fishery on same population
- History of industry pressing for catch limits that exceed scientific advice
- Internationally recognized failure of managers to heed scientific advice
- Considerable uncertainty

Details regarding these factors and related concerns are offered below according to the MSC categories associated with **population health, bycatch issues, and management reliability.**

HEALTH OF TARGET POPULATION

Inherent vulnerability

Spiny dogfish are exceptionally susceptible to overfishing, even when compared to other sharks. This species' aggregating habit, late maturity, low reproductive capacity, long generation time, and extremely low intrinsic rate of population increase make it one of the world's most vulnerable, commercial fish species. In the Northwest Atlantic, female spiny dogfish do not begin to reproduce until after age 12 and then give birth to only 2-9 pups after a record-long, two-year gestation.

The Food and Agriculture Organization (FAO) of the United Nations convened technical consultations in 2000 and 2001 to examine the resilience and extinction risk of marine fish in order to suggest listing criteria for the Convention on International Trade in Endangered Species (CITES). Expert participants found that long-lived, late-maturing species are at a relatively high risk of extinction from exploitation, and that life history characteristics, especially productivity, were key factors in extinction risk, and that the most vulnerable species are those with an intrinsic rate of population increase of less than 0.14 and a generation time of greater than 10 years (FAO 2001). Spiny dogfish fit within these parameters of exceptional vulnerability (the lowest productivity category for commercially exploited aquatic species).

The FAO report also highlighted other risk factors that hamper sustainability, including selectivity of removals; age, size or stage structure of a population; social structure, including sex ratio; and vulnerability at different life stages. All of these risk factors apply to spiny dogfish, which aggregate in schools of pregnant females that can be easily targeted.

Biomass

I assume that you are well aware of the widely reported "rebuilt" status of U.S. Atlantic spiny dogfish as well as the 2010 report on the species status from the Transboundary Resources Assessment Committee (TRAC) (from which we draw many of the following points).

It seems worth noting that the latest estimates of Northwest Atlantic spiny dogfish biomass are only slightly above the Atlantic States Marine Fisheries Commission (ASMFC) biomass target. More important, it is essential to recognize that *the population is predicted to decline between 2011 and 2017* as a result of record low recruitment from 1997-2003. After 2017, *mature female biomass recovery is dependent on recruitment improving despite decreased female size and a skewed sex ratio.*

Given that the MSC considers the level of uncertainty associated with population assessment, we note that the TRAC meeting participants were not able to reach consensus regarding the spiny dogfish population assessment.

Recruitment

The TRAC report underscores that spiny dogfish fecundity is low and highlights that recent recruitment, while improved since 2003, has been lower than expected. Scientists point to decreased maternal size and skewed sex ratio as possible reasons, but questions remain.

Size Structure

Scientists report marked declines in abundance of large (60+cm) dogfish, a pronounced, consistent decline in the average length of mature females (1992-early 2000s), and a resulting decline in average pup size. Pup survival is thought to decrease with size.

Sex Ratio

The ratio of mature male to mature female dogfish has fluctuated since 1993 and, while improved, remains skewed. The lack of direct evidence for demonstrating a resulting negative effect on reproductive output should raise more concern with respect to uncertainty of projections and should underscore the need for a precautionary approach.

Limit and reference points

It appears that there is still no agreed biomass target under the Federal Spiny Dogfish Fishery Management Plan (FMP) as the original target was disapproved in 2000. Such a long-term, significant oversight does little to signal that maintaining appropriate spiny dogfish reference points is a priority for fishery managers.

Additional Uncertainty

Documents associated with the September 2010 meeting of the Spiny Dogfish Monitoring Committee reflect considerable uncertainty with respect to dogfish discards and Canadian fisheries and yet the buffer incorporated into the landings limit is described as "small."

IMPACTS ON THE ECOSYSTEM

Bycatch

The MSC standards promote fisheries that do not pose risk of serious harm to recovery of retained and bycatch species. The MSC highlights the need for precautionary strategies to protect Endangered, Threatened, or Protected Species (ETPs) and monitor related impacts.

As you are aware, the Humane Society of the United States has documented serious issues with respect to Atlantic gillnet fishery bycatch of:

- right whales (*Eubalaena glacialis*)
- humpback whales (*Megaptera novaeangliae*)
- harbor porpoises (*Phocoena phocoena*), and
- bottlenose dolphins (*Tursiops truncatus*).

We urge you to take special note and consideration of this compelling cause for alarm stemming some of the fisheries seeking certification.

In addition, the 2005 NMFS Bycatch Priorities and Implementation Plan for the Northeast Region reports that Mid-Atlantic dogfish gillnet fisheries have bycatch of:

- pilot whale (*Globicephala spp.*)
- common dolphin (*Delphinus spp.*), and
- sea turtles (species undetermined).

As we discussed, spiny dogfish fisheries, depending on the region, take numerous prohibited fish species as bycatch, including:

- thorny skate (*Amblyraja radiata*)
- barndoor skate (*Dipturus laevis*)
- smooth skate (*Malacoraja senta*)
- dusky shark (*Carcharhinus obscurus*)
- sand tiger shark (*Carcharias taurus*)
- sandbar shark (*Carcharhinus plumbeus*), and
- bigeye thresher shark (*Alopias superciliosus*)

Some Atlantic spiny dogfish fisheries are also likely taking as bycatch the following species included on the National Marine Fisheries Service (NMFS) Species of Concern list:

- Atlantic halibut (*Hippoglossus hippoglossus*)
- Atlantic wolffish (*Anarhichas lupus*)
- cusk (*Brosme brosme*)

Atlantic dogfish fisheries take additional overfished groundfish species as bycatch.

The fate of animals, particularly fish species, discarded in these fisheries is generally not well studied or documented.

Habitat

As we discussed, there is widespread concern among the conservation and science communities with respect to damage to vulnerable benthic habitat from the use of bottom trawl gear. Trawls, gillnets, and longlines have the potential to break free and entangle marine wildlife and/or contribute to marine pollution.

RELIABILITY OF MANAGEMENT SYSTEM

Given that spiny dogfish fisheries occur in U.S. state, Federal, and Canadian waters and are fishing essentially the same population, the lack of bi-lateral management as well as the loose connection between the state and Federal management plans is cause for great concern, as are the past decisions made by key management bodies.

As we discussed, I witnessed for many years repeated failures by the Atlantic States Marine Fisheries Commission (ASMFC) with respect to heeding scientific advice for spiny dogfish limits. In at least one case, managers adopted limits that had not been evaluated by their own technical committee, despite agreed procedures for such review. Indeed, the ASMFC became internationally notorious for such irresponsible actions; a 2007 FAO expert report noted the serious fisheries management failure and lack of coordination between Federal and state fishery management plans for the US Atlantic population, and called for "a closer alignment between management measures and scientific advice" (FAO 2007). Whereas the most recent spiny dogfish limits set by the ASMFC have been in line with scientific recommendations, it is important to note that in these cases advice has allowed for substantial increases in fishing. At the ASMFC level, there have been no fundamental

changes to provide assurance that excessive limits would not again become the norm if/when scientists call for dogfish catch reductions.

As a result of the disconnect between Atlantic state and NMFS regulations, the Federal Atlantic spiny dogfish quota has been substantially exceeded in three of the last five years (156%, 146%, 204% taken by the end of April 2007, 2008, and 2009, respectively).

The New England Fishery Management Council (NEFMC) also has a problematic record with respect to following scientific advice for dogfish limits. As recently as 2009, the NEFMC rejected the Monitoring Committee advice (12 million lbs) and instead employed an alternative fishing mortality rate to derive a much higher quota of more than 20 million lbs.

Reckless dogfish quota decisions have of course been driven in large part by vocal representatives of the dogfish fishing industry whose advocacy for higher than advised fishing limits is well documented in the public record since the late 1990s. Associated fishermen have united to fight science-based dogfish catch limits, promote woefully outdated (1953) accounts of the dogfish diet, fund alternative scientific accounts of stock status and feeding habits, and disparage conservationists' efforts. One has to question if such behavior is in line with the MSC's laudable goal of "rewarding sustainable fishing practices."

Whereas the dogfish quota setting records of the Mid-Atlantic Fishery Management Council and the NMFS have been consistently sound, and implementation of U.S. fisheries law amendments now provides for increased accountability in related processes, the ability for the ASMFC to set dogfish fishing limits that exceed those for Federal waters remains a serious threat to dogfish sustainability, particularly if interest in the fishery were to resurge. Similar arguments can be made with respect to Canadian dogfish limits which have been based on catch history, not scientific assessment. Because of this lack of coordination, the MSC goals of "well defined and effective control rules" are not met.

CONCLUSION

Whereas the biomass of Northwest Atlantic spiny dogfish has been increasing due to management and has recently exceeded the target level, this population cannot be considered healthy nor can the "harvest strategy" be considered "robust and precautionary" as prescribed in certain MSC criteria.

Egregious overfishing of Northwest Atlantic spiny dogfish -- focused on pregnant females, driven by industry pressure, and allowed by the fishery management process -- led to nearly a decade of recruitment failure of which all the negative effects have yet to be realized. The population remains in a precarious state, suffering from a truncated age structure, a skewed sex ratio, and decreased pup production, and is predicted to decline in the near future to well below target levels. Renewed recovery is predicated on good recruitment and associated timeframes are highly uncertain. Protection of sub-adult and mature females, by minimizing directed fishing, remains prudent. A precautionary approach, appropriate for such slow growing animals and called for by the MSC, cannot be assured through the current, disjointed management framework, particularly when under pressure from increased demand.

Ecolabels for Northwest Atlantic spiny dogfish will serve to encourage targeted fishing on the segment of the population (mature females) that is most crucial for population recovery.

Given all of these factors as they compare to MSC standards, I cannot see how MSC certification is advisable or warranted for any of the applicant spiny dogfish fisheries.

Thank you for your consideration.

Sincerely,



Sonja V. Fordham
President

Literature Cited:

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March 7, 2012

Ian Scott
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Re: U.S. Atlantic Spiny Dogfish fishery

Dear Mr. Scott:

The Southeastern Fisheries Association is submitting the following comments that support the conclusion that the U.S. Atlantic Spiny Dogfish fishery is sustainable.

The U.S. Atlantic Spiny Dogfish fishery is conducted in a manner that does not lead to over-fishing or depletion of the exploited populations. Support for this conclusion is found at http://www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm, which states "The Atlantic spiny dogfish population has been rebuilt and is currently harvested at a sustainable rate." The National Oceanic and Atmospheric Administration's National Marine Fisheries Service ("NMFS") also concludes the 'Sustainability Status' of the U.S. Atlantic Spiny Dogfish is that it is not overfished and overfishing is not occurring.

Fishing operations in the U.S. Atlantic Spiny Dogfish fishery allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. This is true in large part because the Mid-Atlantic and New England Fishery Management Councils have a joint fishery management plan ("Dogfish FMP") to regulate fishing operations and set an annual quota for U.S. Atlantic Spiny Dogfish in federal waters. Also, the Atlantic States Marine Fisheries Commission works in collaboration with the Mid-Atlantic and New England Fishery Management Councils and manages U.S. Atlantic Spiny Dogfish fishing efforts in state waters. The Dogfish FMP is a prime example of the successful management of a fishery; when implemented in 2000, the annual quota was set to allow the stock to rebuild and in 2010 NOAA declared the stock rebuilt. Additional support for the conclusion that Principle 2 has been met may be found at www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm.

The U.S. Atlantic Spiny Dogfish fishery is a prime example of a successful wild-caught fishery whose sustainability is due in large part to compliance with the 10 National Standards of the *Magnuson-Stevens Act* (MSA). The U.S. Atlantic Spiny Dogfish fishery is harvested under a science-based fishery management plan designed around the 10 National Standards that include sustainable harvest rates and

ecosystem-based conservation requirements to minimize bycatch and habitat impacts and address social economic impacts. This science-based management process has been evolving since 1976 when the MSA was enacted and eight regional Fishery Management Councils were established to help NMFS manage fisheries based on peer reviewed science of the agency. Most rating and certification programs in the United States are premised on the data provided by NMFS. The data on the U.S. Atlantic Spiny Dogfish is updated quarterly at: www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm

Thank you for the opportunity to comment.

Regards,

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March 30, 2012

Re: MSC Certification of the United States Atlantic Fishery for Spiny Dogfish

Dear Mr. Scott,

On behalf of the more than 11 million members and constituents of The Humane Society of the United States (The HSUS) and the Whale and Dolphin Conservation Society, I am submitting the following comments on the process of certification of the Atlantic fishery for spiny dogfish. The HSUS has provided the Marine Stewardship Council (MSC) with comments critical of the wisdom of certifying this fishery since our initial comments in 2009. We reiterated concerns in 2011. Now, in 2012, we are once again renewing our objections to certifying the fishery. In part, our objection is based on the unsustainability of likely protected species bycatch in the fishery (and the lack of appropriate mitigation). In addition, because the National Marine Fisheries Service (NMFS) is undertaking an evaluation of the fishery for inclusion in an upcoming Biological Opinion (BiOp) under the Endangered Species Act (ESA); we believe that the MSC should withhold judgment at least until after the issuance of that BiOp that will analyze more recent impacts of the gillnet fishery on marine protected species and identify additional conditions with which the fishery must comply to prevent jeopardizing species.

We are submitting these narrative comments in lieu of the standardized form that was provided on the website, but in our comments that follow, we will address each of the questions/topics posed in that form in the general order in which they appear.

Evaluation of the Fishery against Specific Performance Indicators

The standardized comment form asks commenters to state if they "do not believe all the relevant information has been used to score;" if they "do not think the information and/or rationale used to score performance indicator[s] is adequate to support the given score;" and if they "do not believe the condition(s) set for the performance indicator are adequate to improve the fishery's

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performance to the SG80 level.” We will indicate our concerns within each of the performance indicators on which we comment below.

We absolutely disagree with the scoring for the gillnet fishery under the performance indicators regarding its interactions with Endangered Threatened and Protected (ETP) species. Furthermore, the conditions that MSC would impose on the state and federal waters gillnet fisheries are neither meaningful nor practical to remedy the data deficits that led to the state and federal waters gillnet fishery scoring a 65 rather than an 80, a score that is itself inappropriately high.

Appendix 1 provides the metrics under which fisheries were scored. While we will provide some brief comments pertaining to our concerns with the management of the fishery for spiny dogfish (section 1), we focus most of our comments on metric 2.3, interactions with ETP species.

1.1 Management outcomes. 1.1.1 Stock Status

With regard to effort directed toward spiny dogfish, we call the MSC’s attention to the recent Federal Register notice that proposes an increase in the quota for spiny dogfish (77 Fed. Reg. 15991, March 19, 2012). With regard to spawning stock biomass (SSB) this Federal Register notice states in part: “...the spiny dogfish stock is not currently overfished or experiencing overfishing. However, while recruitment has increased in recent years, poor pup production from 1997-2003 is projected to result in significant declines in SSB from 2014-2020.” We do not believe this fact was considered in the assessment, and it is an important consideration for the near term future of the stock’s status.

In describing the various Council deliberations over quota recommendations, the Federal Register also notes that when the Mid-Atlantic Fishery Management Council (MAFMC) proposed a quota limit that would be higher than the 2011 allocation “spiny dogfish processors expressed concerns that the dramatic increase in quota and trip limits could lead to unstable market conditions (e.g., low or fluctuating prices), and may not be in the best long-term interests of the fishery (due to the projected future decline in SSB).” Although the MAFMC lowered its recommended increase in response to these concerns, the NMFS has nonetheless proposed a substantially higher quota than that of 2011 or that recommended by the MAFMC.

We absolutely question the sustainability of spiny dogfish stocks, given these acknowledged near-term concerns regarding spawning stock biomass.

2.3.1. Endangered Threatened and Protected Species—Status

The interactions of the gillnet fleet (in both state and federal waters) was scored 80 based, in part, on assurances in the 2010 BiOp regarding the dogfish fishery that a single lethal take in any one of the several fisheries that entangle North Atlantic right whales would not pose jeopardy to the species. This BiOp is being litigated. Independent of the litigation, this BiOp is being re-written by NMFS. The 2010 BiOp that is cited by the MSC authorized *no* lethal take of listed marine mammal species. Despite this, mortality is ongoing and additional measures need to be

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put in place. We refer the MSC to the most recent NMFS stock assessments documenting ongoing mortality above the Potential Biological Removal (PBR) level for both right and humpback whales.

The MSC scoring system states that a score of 80 is warranted only if there is a strategy in place to minimize impact, that there is an objective basis for confidence that the strategy will work and that there is evidence that it is being implemented successfully. The failure of this fishery—in concert with others—to successfully reduce mortality of ETP species is revealed both in most recent NMFS stock assessments. The continued rate of entanglements that exceed the PBR gives clear indication that the strategy in place to reduce fishery impacts has not shown the hoped-for result and measures in the strategy to reduce risk appear to be inadequate. The fishery should score no better than a 60, although we doubt that even those criteria aptly describe the situation (i.e., a score of 60 requires that the status quo cannot assure that measures are in place are considered likely to minimize mortality and that a plausible argument can be made supporting this presumption). The unacceptable levels of fishery-related mortality and serious injury have necessitated re-consultation under Section 7 of the ESA and issuance of a new BiOp is expected by early summer.

With regard to harbor porpoise, the state and federal waters gillnet fisheries also received a score of 80. Again, we believe this inappropriate. Although acknowledging that there is an issue with human-caused mortality (almost entirely in gillnets) exceeding the PBR, this is dismissed as a concern because there is no means of separating out the contribution of the spiny dogfish fishery from those of gillnets set to target other species. As a result, this fishery is inappropriately scored as though there *are* no impacts—an assumption that is completely ungrounded in fact. Further, there is serious question regarding the fishery's commitment to reducing bycatch of porpoises. The gillnet fishery was tasked with reducing mortality to a regulatorily mandated bycatch rate within two seasons, which it did not meet for the first of the two seasons over which compliance was to be assessed. The mortality levels exceed the maximum mortality of harbor porpoise deemed sustainable (i.e., the PBR level). This excess of mortality was largely due to the fishery not complying with mandatory risk reduction measures (e.g., mandatory use of acoustic "pingers"). See Key Outcomes Memorandum at:

http://www.nero.noaa.gov/prot_res/porptrp/doc/HPTRT%20-%20Key%20Outcomes1.pdf and letter to permit holders 2011:

<http://www.nero.noaa.gov/nero/tr/urdoc/11/11HarborPorpoiseBycatchUpdate.pdf>

In addition to ETP marine mammal and turtle species, the MSC should have included in this section on ETP species an evaluation of the fishery relative to bycatch shortnose sturgeon. The evaluation acknowledges on page 78 that this species was listed under the ESA in 2012, yet it is not discussed in this portion of the evaluation. This is inappropriate. Page 79 acknowledges that effort is likely to increase in dogfish fishery in the mid-Atlantic where these nets may interact with sturgeon near their natal rivers and, indeed, as noted above, the NMFS is proposing a significant increase in quotas. However, the evaluation also cites the outdated 2010 BiOp that the fisheries were "not likely to adversely affect" sturgeon. This statement was made by NMFS prior to their listing. It may well have changed by now with the change in listing status. We have been told by the NMFS that a new BiOp is being prepared to better address impacts of the fishery on

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sturgeon, but it is not yet available. We believe that the evaluation should have better considered risks to this ESA-listed stock in its scoring of the fisheries. We also believe that final determination of the appropriateness of MSC certification must wait until an up-to-date impact evaluation can be made—after issuance of the BiOp for ETP species.

2.3.2. Endangered, Threatened and Protected Species—Management Strategy

This section is intended to score whether or not the operation of the fishery hinders recovery, poses risk of serious harm and/or minimizes mortality. We believe that the scoring for both federal and state waters gillnets is inappropriate at 85. With regard to harbor porpoise, as noted above, there has been a history of non-compliance with the federal take reduction plan. The most recent bycatch estimates for gillnet fisheries (of which the dogfish fishery is a part) shows that bycatch continues to exceed the PBR level despite management regulations. The most recent PBR is 703 and the 5-year average mortality in U.S. gillnets was 877 based on data through 2009 (Waring et al., 2011. Available at http://www.nmfs.noaa.gov/pr/pdfs/sars/ao2011_atlantic_draft.pdf). The failure to comply with requirements in the prior take reduction plan resulted in a new take reduction plan, cited by the MSC, that expanded requirements for use of acoustic pingers. The NMFS has already warned the fishery that it must improve compliance or face closure in 2012 (see letter to permit holders referenced above).

The MSC evaluation report (at page 83) cites the Mid-Atlantic Fishery Management Council stating that “*Additionally, protective measures under the Harbor Porpoise Take Reduction Plan (HPTRP) and Bottlenose Dolphin Take Reduction Plan (BDTRP) in combination with Federal SD harvest policy have been sufficient to reduce gillnet fishery interactions with harbor porpoises and bottlenose dolphins below PBR levels.*” As noted above, this is absolutely incorrect for harbor porpoise. The NMFS has documented in the most recent draft stock assessment that mortality *continues* to exceed PBR for harbor porpoise. Any reliance on this MAFMC statement is inappropriate.

With regard to the bycatch of endangered right and humpback whales, as noted above, the NMFS is undertaking preparation of a new BiOp that will address the fact that gillnet fisheries (including the dogfish fishery) continuing to entangle and seriously injure or kill large whales. The current management strategy has not been successful in preventing entanglements that result in serious injury and death. For right whales, NMFS’ 2010 BiOp on the gillnet fisheries authorized no incidental take of this species or humpback and fin whales, yet mortality continues.

The most recent NMFS stock assessment provides a PBR of 0.7 for right whales and 1.1 for humpback whales. However, the average fishery-related mortality in the US is 3.6 per year for humpback whales, and U.S. fisheries are also over PBR for right whales, with NMFS noting that for both species mortalities are based on stranded carcasses and are thus likely an underestimate. The stock assessment for humpbacks also acknowledges that in 2008, at least 2 humpback whales were bycaught in gillnets, one of which may have suffered a serious injury (analyses ongoing). Records by the NMFS show that humpbacks are killed or seriously injured (i.e., likely

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to die) as a result of gillnet entanglement virtually every year. A 2005 analysis by Johnson and colleagues found that gillnet gear was the most frequent source of entanglements for humpback whales (11 of 25 documented entanglements) (Johnson A, Salvador G, Kenney J, Robbins J, Kraus S, Landry S, Clapham P (2005) Fishing gear involved in entanglements of right and humpback whales, *Marine Mammal Science* 21:635–645).

Even a cursory reading of the most recent NMFS take reduction plan shows almost no new measures imposed to protect endangered whales from entanglement in gillnets and our organizations have filed suit against the agency as a result of mortality exceeding allowable levels in the BiOp and because measures in place do not address a number of sources of risk.

Given that the management plans for both harbor porpoise and for large whales are under reconsideration by the NMFS, and that additional fishery restrictions likely as a result of ongoing excessive levels of entanglement of these ETP species; we believe that there is no justification for scoring the fisheries at the minimal level of 60, let alone the score of 80-85 that was assigned.

2.3.3. Endangered, Threatened and Protected Species—Information/Monitoring

Although federal fishery observers are placed aboard the vessels being considered for certification, and they can and do report bycatch of harbor porpoises and dolphins, the NMFS does not provide information in its stock assessment reports that identify the target species of any particular gillnet that resulted in the mortality of a marine mammal (e.g., whether the target was cod or flounder or dogfish). This information may exist in internal observer reports but is not available to the public (nor, so far as we are aware, to the MSC). As such we disagree that information “is broadly adequate” to understand the impact of the gillnet fishery. Indeed we have no idea for most entanglements the nature of the target species. We have reason to believe that the dogfish gillnet fishery has a significant problem with entanglement-related mortality of harbor porpoise, simply because it is a substantial part of the gillnet effort, though the harbor porpoise take reduction team (on which our organizations sit) was told that dogfish nets were a significant contributor to porpoise mortality, particularly in the mid-Atlantic. However, contrary to the assertion that there is “broadly adequate” information on the impact of the fishery, we do not know specifically what its impacts are (e.g., it may be that virtually all or, conversely, very little current ETP mortality may be attributable to gillnets targeting dogfish).

With regard to the entanglement of large whales, there is absolutely no information available on the species being targeted by gillnets found entangling whales, because the gear contains insufficient identifying information to allow tracing to its owner so that interviews might reveal where, when and for what target the net was set. Observers placed aboard federally permitted gillnet vessels have virtually no opportunity to observe entanglements, as nets are not tended and large whales typically are strong enough to break free with entangling gear on them, such that observers would generally have no opportunity to witness an entanglement. In the rare event that the fisherman is with his gear at the time of the entanglement (as was the case twice in 2008 according to the NMFS stock assessment for humpbacks) he may be able to assist with freeing the whale; but, again, records available to the public do not specify the target of the net. Scoring the gillnet fishery 65 grossly misrepresents the reality of the ability to understand and estimate

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mortality for large endangered whales. Even the minimum criteria are not satisfied, because we are allowed virtually no information on the target species of the gillnets that are entangling and killing large whales in excess of their PBR and in excess of the incidental take statement in the NMFS BiOp.

Comments on Other Portions of the Report: Conditions Imposed on the Fisheries.

13.7.8 Federal Gillnet Fishery (Condition 9). And 13.7.11 State Gillnet Fishery (Condition 12).

In our comments, we have combined concerns for both state and federal fisheries as both are prosecuted similarly and both have the same deficiencies and conditions.

This section specifies that “Sufficient data are available to allow fishery related mortality and other impacts of the federal Spiny Dogfish gill net fishery on relevant ETP species to be quantitatively estimated,” and it provides milestones for various future reviews. We note that it is not until the 4th year after certification has already been granted that data are expected to meet the deficiencies that are identified (i.e. that there are not data to allow understanding of the true impact of the fishery on EPT species). Rather than delay certification until such time as there are data to properly assess impacts of the fishery, it will be certified without this understanding. This seems inappropriate.

Further, this deficit cannot be remedied unless and until the NMFS collects and reports data on fisheries by target species rather than by common gear type as it does currently. The NMFS does not identify target species and has stated to various task forces of which the HSUS is a part, that it cannot readily do so. Further, increasing federal observer coverage (as suggested) cannot assist in understanding of impacts of the fishery on endangered right and humpback whales, as the Catch Per Unit Effort is so low even though the overall impact to the population is significant and troublesome (that is, the likelihood of any particular piece of gear entangling an endangered whale is low even though the odds of a whale becoming entangled in its lifetime is significant). Self-reporting, which is also suggested, is also of little use. Ignoring the dubious assumption that people willingly self-report things that can be used against them, the most likely indicator that an entanglement of a large whale has occurred would be the disappearance of a section of gillnet. But a fisherman will likely not know why a gillnet disappeared (e.g., a recreational vessel could have fouled it, a trawler towed through it, or a whale became entangled and swam off with the net wrapped around it).

We find it something of an oxymoron to both provide the fishery with a score of 80, and stating that data on impacts are broadly adequate to show no impact, yet (through this condition) indicate that data are currently insufficient data to assume there is no impact and the fishery needs to work with regulators to obtain this information. Further, there is almost no ability to assure that such data are possible to obtain, since it depends on a complete re-vamping of how the NMFS categorizes fisheries relative to marine mammal bycatch (i.e., categorizing fisheries in their Marine Mammal Authorization Program by target species rather than by gear type).

Comments of The HSUS on the MSC Certification of the Spiny Dogfish Fishery

13.7.14 All Fisheries: Conditions 15 and 16

This section pertains to "Compliance and enforcement: monitoring, control and surveillance mechanisms ensure the fishery's management measures are enforced and complied with." While the dogfish gillnet fleet may be in compliance with federal mandates under the NMFS Take Reduction Plan for Atlantic Large Whales, they are generally *not* in compliance with those of the NMFS Harbor Porpoise Take Reduction Plan. In fact, the lack of compliance with regulatory mandates to use acoustic pingers to reduce bycatch of harbor porpoise was the reason the plan had to be revised to impose additional strictures. Further, despite these new mandates, the fishery has not yet met targets for compliance (Palka, pers. comm.). Should the report from NMFS on the two-year compliance rate (due by the end of May 2012) indicate that the fishery has been largely out of compliance as reflected in bycatch rates, would the MSC deny or rescind certification? We believe that final scoring and potential certification should be delayed until the NMFS completes its evaluation of compliance this summer and the MSC can evaluate the sufficiency of compliance with regulatory mandates.

Further, without seeing the conditions imposed by NMFS under the new BiOp that will address bycatch of shortnose sturgeon and other ETP species, how can the MSC assume that a fishery is able to comply or merits the scoring assigned? This too argues for waiting until impending information is available before making a rush to judgment on the fishery and its ability to comply with, as yet unspecified, regulatory mandates.

Assessment of This Fishery against MSC Principles and Criteria for Sustainable Fishing

On page 98 of the assessment, the MSC sums these principles. Principle 1 addresses the need to maintain the target stock at a sustainable level; Principle 2 addresses the need to maintain the ecosystem in which the target stock exists, and Principle 3 addresses the need for an effective fishery management system to fulfill Principles 1 and 2 and ensure compliance with national and international regulations. As we have discussed above, we do not believe that the gillnet component of the dogfish fishery (both state and federal waters) meets these principles.

With regard to Principle 1, there is some concern that poor pup production may lead to short-term declines in the target species (spiny dogfish). This challenges the sustainability of the harvest, particularly in light of the NMFS proposal to significantly increase harvest quotas.

With regard to Principle 2, the continued serious injury and mortality of ETP marine mammals raises concern. Mortality and serious injury of large endangered whales (including critically endangered North Atlantic right whales) continue to exceed PBR despite the NMFS denying authorization for any takes under the 2010 BiOp and despite an extant "management" plan. The NMFS is re-doing the outdated BiOp on which the MSC relied. Taking harbor porpoise and endangered large whales in excess of PBR poses a threat to those species and thus constrains a significant element in the ecosystem.

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With regard to Principle 3, the management regimes in place are not sufficient at this time. The gillnet fishery has not properly complied with management imperatives. The NMFS will issue a summary of the compliance (or, more to the point, the lack of compliance) with regulatory mandates that were imposed 2 years ago. Preliminary information indicates that compliance is low and thus the management is insufficient to constrain takes. Further, the NMFS will be issuing a new BiOp on the fishery to address the serious injury and mortality of endangered large whales that continues in spite of the management regime that is in place but is clearly not sufficient. The gillnet fisheries' impact on sturgeon, which are newly listed under the ESA, is not fully understood, nor can it be until production of the BiOp that will not be available in the expedited time frame that the MSC has set out for certifying this fishery.

Completion of Certification on the Projected Timetable is Premature and Inappropriate

Much of the information in Section 2.3 that pertains to interactions of the gillnet fishery with right whales relies on the 2010 BiOp that was issued by the NMFS. This BiOp should not be the basis for the evaluation of impacts of the fishery or sufficiency of management regimes, as it does not represent the current status of the fishery with regard to impacts on non-target ETP species. As we have previously stated, the NMFS is currently undertaking re-issuance of a BiOp as a result of the recent listing of Atlantic sturgeon under the ESA (and interactions of this species with gillnet fisheries) and it will presumably address critique raised in litigation that was filed regarding the fisheries having exceeded the incidental take statement in that BiOp.

In the filings with the court, the NMFS averred that they had initiated re-consultation on February 12, 2012. ESA and the Section 7 regulations (50 CFR 402.14) require that formal consultation be concluded within 90 calendar days of initiation, and that a BiOp be completed within 45 days after the conclusion of formal consultation. We believe that it behooves the MSC to wait until issuance of this BiOp before making conclusions regarding the impact of this fishery on ETP species, including marine mammals and sturgeon which are the subject of a revised BiOp. To conclude that the fishery is not likely to adversely affect short nose sturgeon and does not pose jeopardy to endangered marine mammals based on a now-outdated BiOp—when a new one is in the offing—would be premature and irresponsibly risk prone.

While we understand the desire of the fishery to obtain a more favorable market position that would accrue from certification, we are concerned that, for all the reasons discussed above, it would be premature for the MSC to certify the gillnet portion of the fishery at this time. Given the impending release of information regarding impacts of this portion of the fishery on ETP species and the inability of the data collection and reporting methods to elucidate the contribution of the gillnet fisheries for dogfish to unsustainable levels of mortality in ETP species, we believe that the time is not ripe for certification of the gillnet portions of the fishery.

No decision on certification should be made until such time as the MSC has evaluated all the most relevant and recent information on the fishery. Reliance on an outdated BiOp, outdated statements by the MAFMC and making the assumption that a lack of objective data and information on impacts of gillnets is the same thing as no impact, would be inappropriate and a disservice to consumers who rely on certification as being the best information available on

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sustainable fisheries. We do not believe that the information used in this evaluation meets that standard.

Sincerely,



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Canada

Re: Marine Stewardship Council certification of the U.S. Atlantic Spiny Dogfish fishery

Dear Mr. Scott:

The Virginia Seafood Council is submitting the following comments in support of certification by the Marine Stewardship Council (“MSC”) that the U.S. Atlantic Spiny Dogfish fishery is sustainable.

It is the opinion of the Virginia Seafood Council that the U.S. Atlantic Spiny Dogfish fishery meets all of the MSC Principles and Criteria for Sustainable Fishing.

Regarding Principle 1:

A fishery must be conducted in a manner that does not lead to over-fishing or depletion of the exploited populations and, for those populations that are depleted, the fishery must be conducted in a manner that demonstrably leads to their recovery.

The U.S. Atlantic Spiny Dogfish fishery is conducted in a manner that does not lead to over-fishing or depletion of the exploited populations. Support for this conclusion is found at http://www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm, which states “The Atlantic spiny dogfish population has been rebuilt and is currently harvested at a sustainable rate.” The National Oceanic and Atmospheric Administration’s National Marine Fisheries Service (“NMFS”) also concludes the ‘Sustainability Status’ of the U.S. Atlantic Spiny Dogfish is that it is not overfished and overfishing is not occurring.

Regarding Principle 2:

Fishing operations should allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends.

Fishing operations in the U.S. Atlantic Spiny Dogfish fishery allow for the maintenance of the structure, productivity, function and diversity of the ecosystem (including habitat and associated dependent and ecologically related species) on which the fishery depends. This is true in large part because the Mid-Atlantic and New England Fishery Management Councils have a joint fishery management plan (“Dogfish FMP”) to regulate fishing operations and set an annual quota for U.S. Atlantic Spiny Dogfish in federal

waters. Also, the Atlantic States Marine Fisheries Commission works in collaboration with the Mid-Atlantic and New England Fishery Management Councils and manages U.S. Atlantic Spiny Dogfish fishing efforts in state waters. The Dogfish FMP is a prime example of the successful management of a fishery: when implemented in 2000, the annual quota was set to allow the stock to rebuild and in 2010 NOAA declared the stock rebuilt. Additional support for the conclusion that Principle 2 has been met may be found at www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm.

Regarding Principle 3:

The fishery is subject to an effective management system that respects local, national and international laws and standards and incorporates institutional and operational frameworks that require use of the resource to be responsible and sustainable.

The U.S. Atlantic Spiny Dogfish fishery is a prime example of a successful wild-caught fishery whose sustainability is due in large part to compliance with the 10 National Standards of the *Magnuson-Stevens Act* (MSA). The U.S. Atlantic Spiny Dogfish fishery is harvested under a science-based fishery management plan designed around the 10 National Standards that include sustainable harvest rates and ecosystem-based conservation requirements to minimize bycatch and habitat impacts and address social economic impacts. This science-based management process has been evolving since 1976 when the MSA was enacted and eight regional Fishery Management Councils were established to help NMFS manage fisheries based on peer reviewed science of the agency. Most rating and certification programs in the United States, including certification by MSC, are premised on the data provided by NMFS. The data on the U.S. Atlantic Spiny Dogfish is updated quarterly at: www.nmfs.noaa.gov/fishwatch/species/atl_spiny_dogfish.htm

Conclusion:

The Virginia Seafood Council encourages MSC to certify the U.S. Atlantic Spiny Dogfish as sustainable because it meets all of the MSC Principles and Criteria for Sustainable Fishing.

Thank you for the opportunity to comment.

Regards,

Kim Huskey

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30 March 2012

Ref: WWF Comments to the Public Comment Draft Report for the US Atlantic Fishery for Spiny Dogfish

Dear Mr. Scott,

WWF has considered the draft assessment report for the US Atlantic spiny dogfish fishery. We believe that the assessment team has considered the issues raised thus far by stakeholders and scored the fishery according to the MSC Certification Requirements. However, we are concerned about the proposed certification of a fishery known to have significant impacts on retained, discarded, and ETP species, as well as a history of management failure.

Our issue of greatest concern is the impact of the gill net fishery on Atlantic sturgeon¹. As the report notes, Atlantic sturgeon was listed under the US Endangered Species Act in January 2012. The US National Marine Fisheries Service has indicated that the loss of only a few adult females from the Delaware River population would hinder recovery, and that the populations in the New York Bight and Chesapeake Bay are at risk of extinction. Although Atlantic sturgeon is now protected, the spiny dogfish fishery management plan does not currently take the listing into account. WWF is not convinced that the current spiny dogfish management framework, which has a history of failure, will adequately address the issue quickly enough to not hinder the recovery of Atlantic sturgeon.

WWF realizes that the current MSC guidance does not require the assessment team to take the fishery's response to the ESA listing of Atlantic sturgeon into consideration in its analysis as the listing occurred after the end of the information-gathering phase. Instead (and following MSC guidance), the report notes that the issue will be monitored during annual audits. Because the status of Atlantic sturgeon is so critical, WWF does not feel that this approach is sufficient. Notably it illustrates that in this case, especially, the MSC Certification Requirements are not a correct or thorough reflection of the MSC standard for sustainable fishing.

Certainly if the fishery were to be scored at present, Pls 2.3.1, 2.3.2, and 2.3.3 would score below 60 and the fishery would be ineligible for MSC certification. WWF believes that due to the severity of the status of Atlantic sturgeon, the spiny dogfish fishery should be required to address impacts on the population(s) before being certified as a sustainable fishery. If the impacts of the fishery on Atlantic sturgeon are not addressed now, this potential MSC-certified fishery may very well lead to the devastation of an ESA-

¹ The PCDR notes in several places that Atlantic sturgeon is bycatch in the spiny dogfish fishery, but please note that the species is incorrectly omitted from Table 7 on p. 74.

listed species, and that does not align with the MSC's mission to contribute to ocean health by recognising and rewarding sustainable fishing practices.

At an absolute minimum, WWF believes that an expedited first audit is necessary and critical as the listing of Atlantic sturgeon is a 'major change' in relation to the circumstances of the fishery and likely to have a material difference on the certification status.

Thank you for considering our concerns; we look forward to speaking further with the assessment team and the MSC on this topic.

On behalf of WWF US and the Smart Fishing Initiative,

Sincerely,



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Cc:

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Dan Hoggarth
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Audit Team Responses

American Bluefin Tuna Association, American Scallop Association, Inc., Atlantic States Marine Fisheries Commission, Cape Cod Commercial Hook Fishermen's Association, Inc, City of Gloucester, City of New Bedford, Maine Coast Fishermen's Association, Massachusetts Division of Marine, Massachusetts Lobstermen's Association, Mid-Atlantic Fishery Management, National Association of Charterboat Operators, National Oceanic and Atmospheric Administration, New England Fishery Management Council, North Carolina Watermen United, Northeast Fishery Sector III, Northeast Fishery Sector VII and VIII, Northeast Seafood Coalition, Southeastern Fisheries Association, Inc., Virginia Seafood Council

The audit team concurs with the view expressed by WWF that it *“has considered the issues raised thus far by stakeholders and scored the fishery according to the MSC certification requirements”*. Given the length of time that has been required to complete the assessment, other issues have arisen and these have been identified by other stakeholders. However, on considering those issues the team does not find any grounds to revise its score and change the recommendation to certify the various units of certification as meeting the MSC standard.

On that basis we agree with the opinion of the stakeholders that the U.S. Atlantic Spiny Dogfish fishery meets the MSC Principles and Criteria for Sustainable Fishing, albeit with a number of conditions to certification that have resulted in the definition of a client action plan. The progress towards achieving the milestones defined in that plan will be reviewed by an annual audit of the fishery that will also revise the status of the fishery to ensure that it continues to conform to the MSC Principles and Criteria (e.g. that the annual quotas established reflect scientific advice and that the established quota is not over fished).

Subject to confirmation, it is proposed that in the case that the determination is to certify the fishery, the first annual audit be held prior to the due date (i.e. the anniversary of the certification) to review the situation regarding the interaction with Atlantic Sturgeon and the response of the management bodies to the protected status of that species.

Marine Stewardship Council

Ref	Type	Page	Requirement	Reference	Details
TO.246	Major	69	CR-V1.2-CB3.5.2	The team shall determine and justify which species are considered 'main' and which are not.	<p>The justification for which species are considered 'main' species in P2 is not consistent with the UoCs defined for assessment. To certify a fishery to bear the ecolabel it is necessary to consider all retained catch and bycatch associated with the UoC targeted catch. The definition of the fishery used in 6.1.5 does not include all the fishing operations catching spiny dogfish assessed in P1 for use with the MSC ecolabel.</p> <p>It may be appropriate to revisit P2 scores considering information from all fishing operations from which spiny dogfish is being assessed for certification. Is there evidence no other 'main' species would be identified by including this information?</p>

Audit Team Response

We detected a problem in table 6 and gained new data to describe the retained and bycatch species in fisheries where SD is caught in directed activity and as a by catch in other fisheries. We have substantially redrafted the relevant sections in order to clarify the approach. This has led to revision of some scores and the setting of new conditions. There has been clarification of the treatment of vulnerable species.

TO.249	Major	160	CR-V1.1-27.10.6.1	Rationale shall be presented to support the team's conclusion.	<p>For PI 1.2.3 and 3.2.3 the rationale does not support the score given.</p> <p>It is not clear what proportion of the spiny dogfish fishery operating in state waters (from which the majority of catches are now taken) operate with a state licence as opposed to a federal licence. The report highlights the lack of observer coverage and trip reporting from state registered vessels. This information may provide additional justification to scoring of Pis in Principles 1 and 2.</p> <p>Estimates of discards and discard mortality rely on observer data only available from federal licenced vessels.</p> <p>Additional rationale for PI 3.2.3 in the state UoCs is needed to understand the scoring. Other PI rationales for state UoCs should be reviewed to ensure rationale is provided to support the scores.</p>
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Audit Team Response

We have reviewed the rational for the score for 1.2.3 and consider that the score of 80 that is allocated is appropriate and is supported by the rational.

Specifically regarding discards, the scientific approach to taking account of the discard rate and associated mortality is fully deccribed in 3.4.6 with the use of fishery observer data to estimate discard. The method (referenced in 3.4.6) incorporates discard estimates based on observer records in the estimation of total removals and these give the most reliable information available. Evidence shows that a scientifically based buffer has been built into the model to account for uncertainty regarding discards and the best estimates of discards are used. There is no difference in the treatment of State and Federal activity.

To catch fish in State waters requires a License issued by the State. There is trip reporting for vessels harvesting state waters (ACCSP – SAFIS).

The rational for PI 3.2.3 (State) has been redrafted and rescored with changes to Conditions 15 & 16 (now 17 & 18).

TO.250	Major		CR-V1.1-27.15.3.3	<p>BABs shall include the following in a separate section or appendix to the Public Comment Draft Report: Explicit responses from the team to submissions described in 27.15.3.1 and 27.15.3.2.</p> <p>a. The CAB shall have sent these responses to the stakeholders prior to their publication in the public comment draft report.</p>	<p>Responses from the team to submissions described in 27.15.3.1 and 27.15.3.2. were included in the report. These were not explicit and did not address how the concerns of the stakeholders had been addressed in the PCDR.</p> <p>For example, in the submission made by Shark Advocates International, it was cited that the spiny dogfish quota has been substantially exceeded in three of the past five years. It is not clear from the report whether this is the case and if so whether this has been considered in the scoring of the fishery.</p>
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Audit Team Response

We consider that the report addressed the great majority of the issues raised by the stakeholders and indeed we were proactive, as we have to be, in considering the various views expressed. In our opinion, to explain point-by-point how we have addressed specific concerns would require a further extensive input when the required action is for the stakeholders to read the report. We acknowledge that the report is long; however this is an indication of the rigorous nature of our analysis and the amount of information that was considered in order to ensure that all stakeholder issues were covered. If we miss a point, or the response to a specific point is not clear, then we apologise.

There is now a specific response to the point made by Shark Advocates International that is repeated in their written response to the Public Comment Draft Report. It is misleading to claim that the quota had been overfished in three of the past five years; that was an issue until 2008 that largely resulted from the slowness of landing reporting at the State level i.e. fish continued to be landed after the quota had been taken because the data was not available in the time required. The system of overages has been introduced and the management approach has been tightened up (see response to Shark Advocates). The proportion of the annual quota caught for fishing years 2009, 2010 and 2011 were 94.4%, 94.4% and 100.3%.

TO.251	Major		CR-V1.1-CB3.5.5	<p>The team shall consider species used as bait in a fishery, if they are caught by the fishery under assessment or elsewhere under the Retained Species component in P2.</p>	<p>Bait used in the fishery should be scored under the retained species component.</p> <p>There is no reference made to the bait used in the longline UoCs having been considered in the assessment.</p>
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Audit Team Response

New information has been added; none of the species used as bait in the longline fishery are considered as main.

TO.254	Major	113	CR-V1.1-27.12.1.5	<p>The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products: Any transshipment activities taking place.</p>	<p>The report does not define the systems of tracking and tracing to be used when transshipment does occur, even though it states transshipment is less likely.</p>
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Audit Team Response

The text has been revised.

TO.255	Major	113	CR-V1.1-27.12.1.6	<p>The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products: The number and/or location of points of landing.</p>	<p>The report does not define the points of landing or at least the status of these ports e.g. registered to the various states, nor are the list of states yet available in Annex 6.</p>
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Audit Team Response

The information on the ports is available at <http://www.nero.noaa.gov/permits/data/>. For the 2,297 vessels with SD permits for 2012 the information provided includes the principal port City by State. The dealer information provides the name of the port and state.

TO.256	Major	113	CR-V1.1-27.12.1.3	The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products. The opportunity of substitution of certified with non-certified fish prior or at landing.	The report identifies there will be 'systems required to reduce the risk of certified SD being contaminated by non-certified product' but does not define what these systems are or where the particular risks are.
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Audit Team Response

We consider that section 12.1 adequately covers this point.

TO.258	Major	113	CR-V1.1-27.12.1	The CAB shall determine if the systems of tracking and tracing in the fishery are sufficient to make sure all fish and fish products identified and sold as certified by the fishery originate from the certified fishery. The CAB shall consider the following points and their associated risk for the integrity of certified products.	The report does not provide a list of eligible vessels (with the reference to Appendix 6 being currently blank), or details on what constitutes an eligible vessel. Official records of vessels are mentioned, but without a link to where or what this is.
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Audit Team Response

The required information has been included (section 12.2 and annex).

TO.248	Guidance		NA		<p>The Gulf of Maine stock assessment, available at the end of 2011, may include significant new information relevant to the scoring of P2 retained species indicators. It would be reasonable to assess this information for relevance to this assessment now.</p> <p>It is noted that information on Atlantic sturgeon made available in Jan 2012 has been included in the assessment.</p> <p>Not considering this information now may mean an expedited audit becomes necessary.</p>
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Audit Team Response

Please see the responses on these two issues as directed to the Humane Society, Shark Advocates International and WWF.

TO.253	Guidance	113	NA		<p>There are many typographical in some sections of this report. For example, within section 12.1 on traceability. Second bullet 'tyat' instead of 'that'. Fifth bullet 'theb' instead of 'the'. Sixth bullet 'peoduct' instead of 'product'. Seventh bullet 'delaer' instead of 'dealer'. 12.2 first paragraph "palces" instead of "places".</p> <p>The report would benefit from further proof reading.</p>
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Audit Team Response

The report has been spell checked.

TO.259	Guidance	113	CR-V1.1-27.12.1.2	The possibility of vessels fishing outside the unit of certification.	The report highlights that 5% of total landings may be from outside of the UoC, and also that other gear types are in use that catch SD, but does not explain how the non-certified-gear-caught catch will be kept separate from UoC product, or if UoC vessels can carry non-certified gear in the same trips, and if so how this risk is managed.
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Audit Team Response

The text in section 12.1 has been edited to clarify the situation.

TO.260	Guidance	62	NA	Heading 'Observer Program' on Pg 62 then Section 5.3.4 Research Plan below suggests some text may have been omitted.
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Audit Team Response

The text has been corrected.

TO.261	Guidance	Client Action Plan	CR-V1.1-27.11.3.1	27.11.3: The CAB shall not accept a client action plan if the client is relying upon the involvement, funding and/or resources of other entities (fisheries management or research agencies, authorities or regulating bodies that might have authority, power or control over management arrangements, research budgets and/or priorities) without: 27.11.3.1 Consulting with those entities when setting conditions, if those conditions are likely to require any or all of the following: a. Investment of time or money by these entities. b. Changes to management arrangements or regulations. c. Re- arrangement of research priorities by these entities.	Some MSC assessment reports include documentary evidence that consultation on conditions has been agreed by the relevant management agencies. This can be useful for stakeholders.
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Audit Team Response

As highlighted in the client action plan, the client has consulted with federal and state managers who have confirmed their support for the implementation of the plan in response to the defined conditions to certification. Both MAFMC (see letter dated March 14, 2012 from the Executive Director) and the ASMFC (see letter dated March 30, 2012 from the Executive Director) support the certification. A formal letter of support is not a requirement and given the processes involved in gaining formal support this alternative has not been pursued.

Shark Advocates International

respond to the complex MSC certification process. In general, I am not satisfied that the concerns I expressed last year have been adequately addressed in the public comment document, nor do I agree with the high scoring these fisheries have somehow achieved. I find it particularly perplexing that the gillnet fisheries can score so closely to fisheries using other gear, given the substantial associated bycatch problems.

Audit Team Response

In drafting the report we were conscious of the need to be proactive in responding to stakeholder concerns; however this does not imply that we find support for all the issues raised by those stakeholders. We apologise if we have failed to respond explicitly to a specific point. Concerning the scores given to individual gears, the rationale for the scores under each performance indicator are provided in the scoring table and we follow the MSC guidance for determining the final score.

Just as importantly, it seems as if the public comment document may have been finalized just before two major developments with respect to the status of fish species taken as bycatch or retained catch in the region's spiny dogfish fisheries:

- New results from an assessment of the Gulf of Maine cod stock, and
- The listing of Atlantic sturgeon under the U.S. Endangered Species Act.

I feel strongly that these factors warrant closer investigation and a re-evaluation of scoring.

Audit Team Response

We note that the assessment process has taken far longer than originally planned, due in large part to the rigorous nature and comprehensiveness of the assessment. Certainly the production of the final report was not timed to avoid consideration of the two "major" developments noted.

After the information gathering phase was completed, the team compiled and analyzed all relevant information (including technical, written and anecdotal sources) prior to scoring the fishery. The team discussed in detail the evidence available after the information gathering phase, weighed up the balance of evidence and used its judgment to agree a final score following the processes defined by MSC.

Atlantic sturgeon was recently listed. We refer to the WWF stakeholder comment that we have considered the issues raised thus far by stakeholders and scored the fishery according to the MSC Certification Requirements. The management authorities have not had the opportunity to respond to the listing; when they do in the time allowed then we will audit that response through an expedited first annual audit of the fishery as provided for under MSC Certification Requirements. Please refer to our response to the comment of WWF on Atlantic Sturgeon

Our scoring of PI 2.1.1 already reflects the situation on Gulf of Maine and we do not consider that our findings have been changed by the recent report that the stock has not recovered. We had not taken into account the widely held opinion before the resource assessment that the cod stock in the Gulf of Maine would have been found to have recovered. Indeed we note that for the gill net fishery the relevant retained species for this UoC is Atlantic cod which is primarily taken in the northern part of the UoC. Both scoring issues of SG60 are met: the stocks are outside biological limits but there are measures in place that are expected to ensure that the fishery does not hinder recovery and rebuilding; the SG80 scoring issue is not met as the management measures in place have not been demonstrably effective in rebuilding the stocks. This led us to set a condition to the recommended certification: In the State spiny dogfish trawl fishery there is a partial strategy of demonstrably effective management measures in place such that the fishery does not hinder recovery and rebuilding of the stock of Atlantic cod in the Gulf of Maine. This condition was based on the premise that the 2011 stock assessment could find that there is still overfishing of the Gulf of Maine cod stock or if the fishery is once again categorized as overfished.

Officials note that revised cod management measures have not yet been formulated, but could include reductions in other fishing opportunities.

Based on the fact that cod are a major bycatch and retained catch for the dogfish fisheries in question, it seems that a re-evaluation of at least PI 2.1.1 is in order.

Audit Team Response

Please refer to the point above. The scores of 60 for PI 2.1.1 allocated to FedGN and AFGN of 60 were based on the previous assessment; the rationale states that the stocks are outside biological limits, that resource productivity is poor due to low recruitment and low weights at age compared to the 1980s, that fishing mortality has remained above F_{ref} and adult biomass has fluctuated without any appreciable rebuilding. The 2012 assessment concludes that the Georges Bank Atlantic cod stock is overfished and overfishing is occurring. There is a retrospective bias in the assessment which suggests that past assessments have overestimated recruitment and the spawning stock biomass. The new trajectory for the spawning stock biomass (beginning of year) goes from 12,033 mt in 2005 to 20,773 in 2011, with a general decline in the fully recruited fishing mortality over the same period.

We can only expect the fishery managers to respond to the regulations in place; the stakeholder comments that revised cod management measures have not been formulated and could include reductions in other fishing opportunities.

Given the precarious status of Atlantic sturgeon and the significant threat posed to this endangered species by spiny dogfish fisheries -- at the very least -- Pls 2.3.1, 2.3.2, and 2.3.3 should be re-evaluated.

Audit Team Response

Atlantic sturgeon was recently listed. We refer to the WWF comment that we have considered the issues raised thus far by stakeholders (i.e. up to version 3) and scored the fishery according to the MSC Certification Requirements. The listing is too recent for the management authorities to have responded. Given the importance of issue, we will require an expedited first annual audit of the fishery as provided for under MSC Certification Requirements.

Inherent vulnerability

Spiny dogfish are exceptionally susceptible to overfishing, even when compared to other sharks. This species' aggregating habit, late maturity, low reproductive capacity, long generation time, and extremely low intrinsic rate of population increase make it one of the world's most vulnerable, commercial fish species. In the Northwest Atlantic, female spiny dogfish do not begin to reproduce until after age 12 and then give birth to only 2-9 pups after a record-long, two-year gestation.

Audit Team Response

In our opinion, the stakeholder makes an unsubstantiated statement that SD is exceptionally susceptible to over fishing. The stakeholder lists some biological attributes, using the nature of the species biology as "proof" that it is "inherently" vulnerable to overfishing. In our expert opinion, the following points indicate that the stakeholder's view is mistaken.

1. While the stock was previously overfished, the SD population even when depleted is extremely large (currently greater than 500,000 mt (about 160,000,000 fish);
2. Spiny dogfish is the most common shark and one of the most common fish in the north Atlantic;
3. The stock is not on the "edge" as are some large sharks (white for example) whose population numbers are very small;
4. The fact that the species recovered so rapidly after depletion indicates that it is highly resilient;
5. The low fecundity of the species is compensated by pups being born as fully functional juveniles with a high natural survival rates at all sizes (aside from fishing affects). With effective fisheries management this has led to a faster than anticipated recovery of the stock.
6. These points indicate that due to high survival rates (as opposed to teleosts that have extremely low survival in early life stages) SD does not have a low intrinsic rate of population.
7. Stage based fishing mortality (including discards and Canadian removals), recruitment, pup production, pup survival, age at maturity are all accounted for in the assessment of the population and the formulation of a level of removals that have allowed the population to grow and exceed target.
8. If in the future there is a downturn in the population, there is an HCR in place to correspondingly reduce quota.
9. The male to female ratio has declined returning towards 1980s values with a reduction in the skew.

It seems worth noting that the latest estimates of Northwest Atlantic spiny dogfish biomass are only slightly above the Atlantic States Marine Fisheries Commission (ASMFC) biomass target. More important, it is essential to recognize that ***the population is predicted to decline between 2011 and 2017*** as a result of record low recruitment from 1997-2003. After 2017, ***mature female biomass recovery is dependent on recruitment improving despite decreased female size and a skewed sex ratio.***

Given that the MSC considers the level of uncertainty associated with population assessment, we note that the TRAC meeting participants were not able to reach consensus regarding the spiny dogfish population assessment.

Audit Team Response

The U.S. bases its fishery management objectives on biomass and mortality levels in relation to BRPs consistent with MSY (Kilduff *et al.* 2009). The approach used to assess the status of U.S. SD is consistent with the MSC standard.

The SSB exceeds the target which leads to the conclusion that the stock has recovered; overfishing is not occurring and the population is not overfished. As long as SSB exceeds the target (by any amount including “slightly” as expressed by the stakeholder) then the stock is considered in the healthy zone. This principle applies to all managed stocks.

As stated in the report, recent documentation in the form of a 2011 MAFMC memo provides for a more explicit HCR as defined by the SSC. Previously, HCR for SD were more implicit. The main uncertainty which is the size of the adult population in the short to medium term as a result of previous low recruitments has been added to the rationale.

As stated in our report: in 2011, a HCR was put in place by ASMFC (ASFMC 2012) based on advice from SSC derived from Rago (2011) stating: “*The SSC recommends a 1-year specification of ABC. The SSC applied the Council's risk policy for a typical life history1, an estimated B2012/Bmsy ratio > 1, and a CV of the OFL distribution of 100%. Using these parameters, the Council's risk policy implies a $P^* = 0.40$. Applying this P^* to the OFL produces an ABC = 20,352 mt (44.9 million pounds). The SSC notes that the stock biomass is projected to decline in the future because of poor recruitment in earlier years. This trend will mean that the ratio of Bcurrent/Bmsy will become <1. As a result, the P^* value developed by the Council's risk policy will be lower, thereby leading to a reduced ABC in future years.*” A multi-year OFL/ABC was also provided in the ASFMC Memo that indicates adaptation to the recruitment fluctuations. The key to this recommendation is that it allows a downward adjustment to the ABC in future years to account for the potential effect of past (1997- 2003) low past recruitment. If the exploitable population falls below target as is predicted, the ABC can be adjusted accordingly. This advice applies to all waters. Thus, any downturn in SSB will result in a corresponding downturn in the quota established.

The best evidence indicates that the U.S. and Canadian fisheries are based on two different stocks with limited mixing. Notwithstanding this, as a precautionary approach that takes into account the possibility of a single stock being subject to U.S. and Canadian fishing, the U.S. stock assessment incorporates estimates of fishing mortality from the Canadian fishery. Furthermore, the precautionary approach extends to providing a “cushion” since the Canadian harvest is subtracted from the US allowable take.

The most recent analysis available (Fisheries of the Northeastern United States; Proposed 2012 Spiny Dogfish Fishery Specifications 19 March 2012 that at the time of writing this report is still open to comment from stakeholders (<https://www.federalregister.gov/articles/2012/03/19/2012-6576/fisheries-of-the-northeastern-united-states-proposed-2012-spiny-dogfish-fishery-specifications#p-16>) states “*In September 2011, the Northeast Fisheries Science Center (Center) updated spiny dogfish stock status, using the most recent catch data and biomass estimates from the 2011 spring trawl survey. Updated estimates indicate that the female spawning stock biomass (SSB) for 2011 is 169,415 mt, about 6 percent above the target maximum sustainable yield biomass proxy (SSB max) of 159,288 mt. Additionally, the Center revised the fishing mortality rate (F) reference points that were approved by the SSC. The 2010 F estimate for the stock was 0.093, well below the overfishing threshold (F MSY) of 0.2439. Therefore, the spiny dogfish stock is not currently overfished or experiencing overfishing. However, while recruitment has increased in recent years, poor pup production from 1997-2003 is projected to result in significant declines in SSB from 2014-2020*”.

The SSC subsequently recommended an ABC for spiny dogfish for the 2012 fishing year. The ABC recommendation was based on an overfishing level of median catch at the F MSY proxy, and the Council's risk policy for a Level 3 assessment (probability of overfishing = 40 percent). The resulting 2012 spiny dogfish ABC is 44.868 million lb (20,352 mt), which represents a 34-percent increase from the 2011 ABC”.

Recruitment

The TRAC report underscores that spiny dogfish fecundity is low and highlights that recent recruitment, while improved since 2003, has been lower than expected. Scientists point to decreased maternal size and skewed sex ratio as possible reasons, but questions remain.

Audit Team Response

We do not agree with the stakeholder's opinion. It is not possible to reliably predict recruitment since stock / recruitment relationships are highly variable; but, from what has been observed, as the SSB has increased, so has recruitment (with an increase in the SSB of females and an increase in the number of pups). We cannot identify any evidence in the TRAC report that recruitment has been lower than expected. The initial number of recruits in a given year is only part of the story; their survival is a key issue. The fact that the stock recovered more quickly than expected would indicate that recovery of the SSB was more reliant on the increased survival of recruits rather than their initial number.

Based on the assessment documents, our report points out:

1. Annual estimates of biomass of SD ≤ 35 cm (1-2 years old) indicated highly variable recruitment between 1968 and 1996.
2. From 1997 to 2003, pup production was a record low. Since that date recruitment has improved.
3. Recruitment in 2009 was the fifth highest in the 42-year NEFSC spring survey time series.
4. Recruits per spawner was highly variable among years but was the fifth highest value in 2009.

At the same time, the work being done to improve understanding of the stock / recruit relationship adds to the integrity of the process. A size- and sex-structured equilibrium life history model is used to estimate yield per recruit and female pups per recruit corresponding to various levels of F and the minimum size at entry to the fishery.

Size Structure

Scientists report marked declines in abundance of large (60+cm) dogfish, a pronounced, consistent decline in the average length of mature females (1992-early 2000s), and a resulting decline in average pup size. Pup survival is thought to decrease with size.

Audit Team Response

We consider that the stakeholder's opinion does not consider recent developments in stock status and reflects the situation some years ago rather than the current position supported by the evidence reviewed by the audit team. This evidence indicates that the recovery of the SSB has been accompanied by an increase in size of both adult females and pups. Based on the scientific assessment we find that:

1. Average pup length has increased rapidly in the last three years from 0.055 to 0.08 kg which is similar to the size observed prior to the decline in stock.
2. Currently, the average weight of females (at 3 kg) is about the same as in the 1990s and in the 1960 /1970s. It is lower than the peak recorded in the 1980s (4 kg). Given the variation it is not possible to estimate the norm i.e. is it as recorded at the moment or at the peak in the 1980s.

Sex Ratio

The ratio of mature male to mature female dogfish has fluctuated since 1993 and, while improved, remains skewed. The lack of direct evidence for demonstrating a resulting negative effect on reproductive output should raise more concern with respect to uncertainty of projections and should underscore the need for a precautionary approach.

Audit Team Response

Since 2007, the trend of the male / female ratio is moving towards historic levels with proportions similar to those observed in the 1970s and 1980s, although it remains below the long term mean. In the report we note that the sex ratio of mature males (>60 cm) to females (>80 cm) increased in 1993, rose nearly 3-fold by 2000, but declined from 2004 to 2008 to a point where the ratio is similar to what was observed in the mid-1990s. While the skewed sex ratio may have implications for decreased reproductive output, direct evidence for this effect is lacking as recruitment has increased considerably in recent years and it appears that sex ratio may not be a critical factor. We agree that overall there needs to be a precautionary approach; in our opinion the history of the fishery in recent years fully reflects precaution.

Limit and reference points

It appears that there is still no agreed biomass target under the Federal Spiny Dogfish Fishery Management Plan (FMP) as the original target was disapproved in 2000. Such a long-term, significant oversight does little to signal that maintaining appropriate spiny dogfish reference points is a priority for fishery managers.

Audit Team Response

The scientific advice includes a scientifically based target within a management framework compliant with the FMP and ultimately the MSRA.

The setting of quotas is covered in the document Federal Register Volume 76, Number 189 (Thursday, September 29, 2011 (<http://www.gpo.gov/fdsys/pkg/FR-2011-09-29/html/2011-24511.htm>)) “Sec. 648.230 *Spiny dogfish Annual Catch Limits (ACLs).* (a) *The Spiny Dogfish Monitoring Committee shall recommend to the Joint Spiny Dogfish Committee, an ACL for the commercial spiny dogfish fishery, which shall equal to the domestic ABC (i.e., the ABC minus Canadian catch) recommended by the SSC as specified in Sec. 648.20.*

(1) *Periodicity. The spiny dogfish ACL may be established on an annual basis for up to 5 years at a time, dependent on whether the SSC provides single or multiple-year ABC recommendations.*

(2) *[Reserved]*

(b) *Performance review. The Spiny Dogfish Monitoring Committee shall conduct a detailed review of fishery performance relative to the ACL at least every 5 years.*

(1) *If an ACL is exceeded with a frequency greater than 25 percent (i.e., more than once in 4 years or any 2 consecutive years), the Spiny Dogfish Monitoring Committee will review fishery performance information and make recommendations to the Councils for changes in measures intended to ensure ACLs are not exceeded as frequently.*

(2) *The Councils may specify more frequent or more specific ACL performance review criteria as part of a stock rebuilding plan following a determination that the spiny dogfish stock has become overfished.*

(3) *Performance reviews shall not substitute for annual reviews that occur to ascertain if prior year ACLs have been exceeded, but may be conducted in conjunction with such reviews.*

61. *Section 648.231 is revised to read as follows:*

Sec. 648.231 Spiny dogfish Annual Catch Target (ACT) and Total Allowable Level of Landings (TAL).

(a) *The Spiny Dogfish Monitoring Committee shall identify and review the relevant sources of management uncertainty to recommend an ACT and a TAL for the fishery as part of the spiny dogfish specification process specified in Sec. 648.232. The Spiny Dogfish Monitoring Committee recommendations shall identify the specific sources of management uncertainty that were considered, technical approaches to mitigating these sources of uncertainty, domestic commercial and recreational discards, and any additional relevant information considered in the ACT and TAL recommendation process.*

(1) *The ACT shall be identified as less than or equal to the ACL.*

(2) *The Spiny Dogfish Monitoring Committee shall recommend a TAL to the Joint Spiny Dogfish Committee, which accounts for domestic commercial and recreational discards (ACT minus domestic dead discards). The TAL is equivalent to the annual coastwide commercial quota.*

(b) *Periodicity. The TAL may be established on an annual basis for up to 5 years at a time, dependent on whether the SSC provides single or multiple year ABC recommendations.*

(c) *Performance review. The Spiny Dogfish Monitoring Committee shall conduct a detailed review of fishery performance relative to TALs in conjunction with any ACL performance review, as outlined in Sec.*

62. *Reserved Sec. 648.232 is amended by revising the section heading and adding text to read as follows:*

Sec. 648.232 Spiny dogfish specifications.

(a) *Commercial quota and other specification measures. The Spiny Dogfish Monitoring Committee shall recommend to the Joint Spiny Dogfish Committee a TAL (i.e., annual coastwide commercial quota) and any other measures, including those in paragraphs (a)(1) through (7) of this section, that are necessary to ensure that the commercial ACL will not be exceeded in any fishing year (May 1-April 30), for a period of 1-5 fishing years. The measures that may be recommended include, but are not limited to:*

(1) *Minimum or maximum fish sizes; (2) Seasons; (3) Mesh size restrictions; (4) Trip limits; (5) Changes to the Northeast Region SBRM, including the CV-based performance standard, fishery stratification, and/or reports; (6) Other gear restrictions; and (7) Changes to AMs and ACT control rules.*

(b) *Joint Spiny Dogfish Committee recommendation. The Councils' Joint Spiny Dogfish Committee shall review the recommendations of the Spiny Dogfish Monitoring Committee. Based on these recommendations and any public comments, the Joint Spiny Dogfish Committee shall recommend to the Councils a TAL, and possibly other measures, including those specified in paragraphs (a)(1) through (7) of this section, necessary to ensure that the ACL specified in Sec. 648.230 will not be exceeded in any fishing year (May 1-April 30), for a period of 1-5 fishing years.*

(c) *Council recommendations.* (1) *The Councils shall review these recommendations and, based on the recommendations and any public comments, recommend to the Regional Administrator a TAL and other measures necessary to ensure that the ACL specified in Sec. 648.230 will not be exceeded in any fishing year, for a period of 1-5 fishing years. The Councils' recommendations must include supporting documentation, as appropriate, concerning the environmental, economic, and other impacts of the recommendations. The Regional Administrator shall initiate a review of these recommendations and may modify the recommended quota and other management measures to ensure that the ACL specified in Sec. 648.230 will not be exceeded in any fishing year, for a period of 1-5 fishing years. The Regional Administrator may modify the Councils' recommendations using any of the measures that were not rejected by both Councils.*

(2) *After such review, NMFS shall publish a proposed rule in the Federal Register specifying a TAL, adjustments to ACL, ACT, and TAL resulting from the accountability measures specified in Sec. 648.233, and other measures necessary to ensure that the ACL will not be exceeded in any fishing year, for a period of 1-5 fishing years. After considering public comments, NMFS shall publish a final rule in the Federal Register to implement the TAL and other measures.*

(d) *[Reserved]*

(e) *Distribution of annual quota.* (1) *The TAL (i.e., annual coastwide commercial quota) specified according to the process outlined section Sec. 648.231 shall be allocated between two semi-annual quota periods as follows: May 1 through October 31 (57.9 percent); and November 1 through April 30 (42.1 percent).*

(2) *All spiny dogfish landed for a commercial purpose in the states from Maine through Florida shall be applied against the applicable semi-annual commercial quota, regardless of where the spiny dogfish were harvested”.*

Additional Uncertainty

Documents associated with the September 2010 meeting of the Spiny Dogfish Monitoring Committee reflect considerable uncertainty with respect to dogfish discards and Canadian fisheries and yet the buffer incorporated into the landings limit is described as “small.”

Audit Team Response

Evidence shows that a scientifically based buffer has been built into the model to account for uncertainty regarding discards and the best estimates of discards are used. In our opinion the stakeholder is expressing an opinion and not a view based on scientific evidence. It is clear that the catch estimates include Canadian removals (which in most recent times are small); all bases are considered even though recent wisdom indicates that SD fished in Canadian waters are most likely not part of the stock harvested by the U.S. fleet.

As you are aware, the Humane Society of the United States has documented serious issues with respect to Atlantic gillnet fishery bycatch of:

Audit Team Response

We have responded directly to the comments made by The Humane Society.

In addition, the 2005 NMFS Bycatch Priorities and Implementation Plan for the Northeast Region reports that Mid-Atlantic dogfish gillnet fisheries have bycatch of:

- pilot whale (*Globicephala spp.*)
- common dolphin (*Delphinus spp.*), and
- sea turtles (species undetermined).

Audit Team Response

These species have been considered and are identified in the categorization table. The pilot whale and the common dolphin are protected under MMPA, and five species of sea turtles are listed under ESA, one species as threatened and four species as endangered. The way they have been handled is described in our report.

As we discussed, spiny dogfish fisheries, depending on the region, take numerous prohibited fish species as bycatch, including:

- thorny skate (*Amblyraja radiata*)
- barndoor skate (*Dipturus laevis*)
- smooth skate (*Malacoraja senta*)
- dusky shark (*Carcharhinus obscurus*)
- sand tiger shark (*Carcharias taurus*)
- sandbar shark (*Carcharhinus plumbeus*), and
- bigeye thresher shark (*Alopias superciliosus*)

Some Atlantic spiny dogfish fisheries are also likely taking as bycatch the following species included on the National Marine Fisheries Service (NMFS) Species of Concern list:

- Atlantic halibut (*Hippoglossus hippoglossus*)
- Atlantic wolffish (*Anarhichas lupus*)
- cusk (*Brosme brosme*)

Atlantic dogfish fisheries take additional overfished groundfish species as bycatch.

The fate of animals, particularly fish species, discarded in these fisheries is generally not well studied or documented.

Audit Team Response

The following text has been added at the end of Section 6.4.1: (Note that the species of relevance for this section are the Species of Concern which we mention in the text below for completeness even though they are not formally ESA species).

“In addition, a number of species of fish identified as Species of Concern by NMFS occur in the area covered by the SD fishery and can thus be taken as bycatch. These include Atlantic halibut, Atlantic Wolffish, cusk, thorny skate, dusky shark, and sand tiger shark. It should be noted that the catch of many skates and shark species is prohibited due to their low population levels and that fishermen are not allowed to possess these species. For many species with low incidental catch, there are concerns that the catch of these species is not well documented, could be discarded and that the species are not well studied. Accordingly, the interactions with the SD fishery are unclear. Species of Concern (SC) are species about which NMFS has some concerns regarding status and threats, but for which insufficient information is available to indicate a need to list the species under the ESA. In view of these considerations, we did not consider these species further in this assessment”.

Habitat

As we discussed, there is widespread concern among the conservation and science communities with respect to damage to vulnerable benthic habitat from the use of bottom trawl gear. Trawls, gillnets, and longlines have the potential to break free and entangle marine wildlife and/or contribute to marine pollution.

Audit Team Response

Habitat considerations were based from review of documents covering Essential Fish Habitat, e.g. in NEFMC 2010a and 2010b. There were no issues with respect to fishery interactions with corals due to the type of substrate preferred by SD and the fact that SD is part of the epibenthic fauna. Also, the risks of gear loss are minimized because of short soak times (regulated) in gillnets. For trawls, there were no specific concerns, except for a general concern regarding their impact on bottom structure and fauna. It is also noted that the effort spent by the various gears is now much less than it used to be.

Given that spiny dogfish fisheries occur in U.S. state, Federal, and Canadian waters and are fishing essentially the same population, the lack of bi-lateral management as well as the loose connection between the state and Federal management plans is cause for great concern, as are the past decisions made by key management bodies.

Audit Team Response

This issue is covered in the report. In our opinion, on the basis of available evidence, the stakeholder statement that Canadian and US fish are essentially the same population is not correct. We present the evidence of tagging experiments that indicate that there is limited mixing between the stocks found in the SW Scotian Shelf / Bay of Fundy off Canada and the Gulf of Maine off the U.S. Cross-border mixing was found to occur, but only for an annual

average of 10% of the population (Campana et al. 2007). This indicates the existence of two largely separate stocks delineated by the Canada/USA border. Over 90% of recaptured fish were caught in the country of release (TRAC Proceedings 2010). Research continues to more precisely define the degree of mixing between Canadian and US waters. The TRAC (2010) proceedings indicated that more detailed examination of time-at large and the general patterns of fishing effort in the area of release are necessary before the tag recaptures data can be used to quantify movement flux among release areas. Despite this observed separation (the latest wisdom), the US assessment accounts for Canadian F, thus covering the possibility that northwest Atlantic comprise a single population. The lack of bilateral management is thus not relevant under these circumstances.

We do not see any evidence that state and federal management is loosely connected. The scientific assessment and advice applies to all USA waters and the management plans and related actions are based, as they must be, on that advice.

It is understood that in the past there has been concern about the effectiveness of the management framework. However, over recent years this management framework has proven to be effective which in part is due to a strengthening of the rules governing their decision making process. We do not consider the past record of the management framework to be of relevance – what is relevant is that if the management system fails to take the actions required to ensure the sustainability of the fishery in the future there is a strong likelihood that future annual audits (in the case that the fishery is certified) would result in a revision of the scoring of relevant PIs and this could lead to the definition of new conditions and possibly the suspension and potential subsequent withdrawal of the certification.

This conclusion is supported by reference to the document Federal Register Volume 76, Number 189 (Thursday, September 29, 2011 (<http://www.gpo.gov/fdsys/pkg/FR-2011-09-29/html/2011-24511.htm>) which defines management measures for a number of fisheries including that for SD. It states “(2) *All spiny dogfish landed for a commercial purpose in the states from Maine through Florida shall be applied against the applicable semi-annual commercial quota, regardless of where the spiny dogfish were harvested*”. The same document establishes the rules to be applied in calculating the annual quotas on a precautionary basis.

As we discussed, I witnessed for many years repeated failures by the Atlantic States Marine Fisheries Commission (ASMFC) with respect to heeding scientific advice for spiny dogfish limits. In at least one case, managers adopted limits that had not been evaluated by their own technical committee, despite agreed procedures for such review. Indeed, the ASMFC became internationally notorious for such irresponsible actions; a 2007 FAO expert report noted the serious fisheries management failure and lack of coordination between Federal and state fishery management plans for the US Atlantic population, and called for “a closer alignment between management measures and scientific advice” (FAO 2007). Whereas the most recent spiny dogfish limits set by the ASMFC have been in line with scientific recommendations, it is important to note that in these cases advice has allowed for substantial increases in fishing. At the ASMFC level, there have been no fundamental changes to provide assurance that excessive limits would not again become the norm if/when scientists call for dogfish catch reductions.

Audit Team Response

It is understood that in the past there has been concern about the effectiveness of the management framework. However, in recent years this management framework has proven to be effective which in part is due to a strengthening of the rules governing their decision making process. We do not consider the past record of the management framework to be of relevance – what is relevant is that if there is a failure to take the actions required to ensure the sustainability of the fishery in the future there is a strong likelihood that future annual audits (in the case that the fishery is certified) would result in a revision of the scoring of relevant PIs and this could lead to the definition of new conditions and possibly the suspension and potential subsequent withdrawal of the certification.

As a result of the disconnect between Atlantic state and NMFS regulations, the Federal Atlantic spiny dogfish quota has been substantially exceeded in three of the last five years (156%, 146%, 204% taken by the end of April 2007, 2008, and 2009, respectively).

Audit Team Response

We acknowledge that in the past, overfishing of quota was an issue that resulted the separation of responsibilities between the State and Federal authorities and some delay in the reporting of landings at the State level meaning that a quota had been over fished before it was closed.. Data for fishing years 2009/10, 2010/11 and 2011/12 shows this to be no longer the case, with landings being 94.4%, 94.4% and 100.3% of the established quota respectively

The document Federal Register Volume 76, Number 189 (Thursday, September 29, 2011 (<http://www.gpo.gov/fdsys/pkg/FR-2011-09-29/html/2011-24511.htm>) specifically responds to this issue in Sec. 648.233 *“Spiny dogfish Accountability Measures (AMs): (a) Commercial EEZ closure. The Regional Administrator shall determine the date by which the quota for each semi-annual period described in Sec. 648.232(e)(1) will be harvested and shall close the EEZ to fishing for spiny dogfish on that date for the remainder of that semi-annual period by publishing notification in the Federal Register. Upon the closure date, and for the remainder of the semi-annual quota period, no vessel may fish for or possess spiny dogfish in the EEZ, nor may vessels issued a spiny dogfish permit under this part land spiny dogfish, nor may dealers issued a Federal permit purchase spiny dogfish from vessels issued a spiny dogfish permit under this part.(b) ACL overage evaluation. The ACL will be evaluated based on a single-year examination of total catch (including both landings and dead discards) to determine if the ACL has been exceeded.(c) Overage repayment. In the event that the ACL has been exceeded in a given fishing year, the exact amount in pounds by which the ACL was exceeded shall be deducted, as soon as possible from a subsequent single fishing year ACL”*.The issue has been explicitly included in the report section 3.4.3.

The New England Fishery Management Council (NEFMC) also has a problematic record with respect to following scientific advice for dogfish limits. As recently as 2009, the NEFMC rejected the Monitoring Committee advice (12 million lbs) and instead employed an alternative fishing mortality rate to derive a much higher quota of more than 20 million lbs.

Audit Team Response

Please note the response above to the setting of the quotas introduced since 2009.

Reckless dogfish quota decisions have of course been driven in large part by vocal representatives of the dogfish fishing industry whose advocacy for higher than advised fishing limits is well documented in the public record since the late 1990s. Associated fishermen have united to fight science-based dogfish catch limits, promote woefully outdated (1953) accounts of the dogfish diet, fund alternative scientific accounts of stock status and feeding habits, and disparage conservationists' efforts. One has to question if such behavior is in line with the MSC's laudable goal of "rewarding sustainable fishing practices."

Audit Team Response

We have no opinion on how the fishermen perceived the fishery in previous years although anecdotal information suggests that it was regarded as an “exit” fishery due to the perception that the population of SD was slowing the recovery of more valuable and previously overfished groundfish stocks.The recovery of the SD stock and the application of a new management framework indicates to us that sustainable fishing practices have been introduced into the fishery.

Whereas the dogfish quota setting records of the Mid-Atlantic Fishery Management Council and the NMFS have been consistently sound, and implementation of U.S. fisheries law amendments now provides for increased accountability in related processes, the ability for the ASMFC to set dogfish fishing limits that exceed those for Federal waters remains a serious threat to dogfish sustainability, particularly if interest in the fishery were to resurge. Similar arguments can be made with respect to Canadian dogfish limits which have been based on catch history, not scientific assessment. Because of this lack of coordination, the MSC goals of “well defined and effective control rules” are not met.

Audit Team Response

In recent years, Canadian removals have been so small as to be of limited relevance; this being emphasised if they are not from the same stock as the US fishery. Canada is currently working on a more analytically based assessment and it may prove to be the case that the allowable catch will be much larger than current catch. Both countries are striving to conservative management, thus, lack of coordination is not a significant issue.

Whereas the biomass of Northwest Atlantic spiny dogfish has been increasing due to management and has recently exceeded the target level, this population cannot be considered healthy nor can the “harvest strategy” be considered “robust and precautionary” as prescribed in certain MSC criteria.

Audit Team Response

We consider that the stakeholder's statement is not supported by scientific evidence. Our assessment is based on documented evidence that the population of spiny dogfish is above the target and is considered "healthy" according to the criteria applied to the U.S. management framework. It may be the case that the stakeholder is questioning that framework, but we have not seen any evidence that that is the case. We consider that the harvest strategy applied over recent years can be regarded as precautionary as evidenced by the recovery of the stock; also it may be considered as robust due to the inclusion of a control rule that requires a management response if the SSB declines. Should the fishery be certified, future annual audits will provide the opportunity to review whether or not the harvest strategy and related control rules and tools have been applied. Even if it proves to be the case that they have been applied but due to natural fluctuations the stock was to decline, this would lead a future annual audit to review stock status and if it is below limit reference points than to consider the case for suspending (and potentially withdrawing) the certificate.

Egregious overfishing of Northwest Atlantic spiny dogfish -- focused on pregnant females, driven by industry pressure, and allowed by the fishery management process -- led to nearly a decade of recruitment failure of which all the negative effects have yet to be realized. The population remains in a precarious state, suffering from a truncated age structure, a skewed sex ratio, and decreased pup production, and is predicted to decline in the near future to well below target levels. Renewed recovery is predicated on good recruitment and associated timeframes are highly uncertain. Protection of sub-adult and mature females, by minimizing directed fishing, remains prudent. A precautionary approach, appropriate for such slow growing animals and called for by the MSC, cannot be assured through the current, disjointed management framework, particularly when under pressure from increased demand.

Audit Team Response

Please note the responses above to other similar comments. The stakeholder expresses a number of opinions that are not supported by documented evidence. All scientific evidence refutes the statement that the population is "*in a precarious state*": it has rapidly grown above target; age structure is improving; sex ratio issues may not be all that important but the skew is being removed; and pup production has increased and is at or above longterm mean. SSB may decline after 2014 but a HCR is now in place to account for a downturn, should it happen. Fishing of mature females occurs in a safe zone per the management rules. We are unaware of any documented evidence about increased demand. According to the US approach the fishery is now considered to have recovered. Future quotas will be calculated on the basis of the explicit approach mandated by the MSRA. In the case that the SSB reduces, for whatever reason, that would be a motive for a future annual audit to consider the need to suspend certification and potentially withdraw it. Stakeholders would be fully involved in the annual audit process and be in a position to question the efficacy of the management measures in the context of the mandated US approach and the MSC standard.

Ecolabels for Northwest Atlantic spiny dogfish will serve to encourage targeted fishing on the segment of the population (mature females) that is most crucial for population recovery.

Audit Team Response

The stakeholder does not provide supporting evidence. No matter what the market demand, if the quotas are set according to scientific advice (which is based on SSB female) and the quotas are not overfished then the stock should be fished on a sustainable basis. If quotas are not fixed according to scientific advice or the quotas are overfished without the required overages being implemented then following an annual audit (if the fishery was to be certified) there is a strong possibility that the certificate would be suspended and potentially withdrawn.

Given all of these factors as they compare to MSC standards, I cannot see how MSC certification is advisable or warranted for any of the applicant spiny dogfish fisheries.

Audit Team Response

After the information gathering phase was completed, the team compiled and analysed all relevant information (including technical, written and anecdotal sources) prior to scoring the fishery. The team discussed in detail the evidence available after the information gathering phase, weighed up the balance of evidence and used its judgement to agree a final score following the processes defined by MSC. On the basis of the evidence available and in the context of the MSC standard our recommendation is to the fishery.

The Humane Society of the U.S.

2012, we are once again renewing our objections to certifying the fishery. In part, our objection is based on the unsustainability of likely protected species bycatch in the fishery (and the lack of appropriate mitigation). In addition, because the National Marine Fisheries Service (NMFS) is undertaking an evaluation of the fishery for inclusion in an upcoming Biological Opinion (BiOp) under the Endangered Species Act (ESA); we believe that the MSC should withhold judgment at least until after the issuance of that BiOp that will analyze more recent impacts of the gillnet fishery on marine protected species and identify additional conditions with which the fishery must comply to prevent jeopardizing species.

Audit Team Response

After the information gathering phase was completed, the team compiled and analysed all relevant information (including technical, written and anecdotal sources) prior to scoring the fishery. The team discussed the evidence available after the information gathering phase in detail, weighed up the balance of evidence and used its judgment to agree a final score following the processes defined by MSC.

We note that the MSC process allows stakeholder comment on the assessment report (version 3) that recommends that the fishery be certified against the MSC standard for sustainable fishery. Version 4 contains a determination on whether or not the fishery should be certified and at that stage stakeholders will have the opportunity to object to that determination according to the defined procedures. We are not in a position to take into account the contents of a BiOp that will be published sometime in the future. In the eventuality that the fishery is certified, the team completing future annual audits (in which stakeholders will be able to present evidence) will consider the implications of any new information and whether or not, in the light of that information, the fishery continues to meet the MSC standard for sustainable fisheries. Where the case merits, this could involve the rescoring of individual performance indicators and if such rescoring was to reduce the score for any of the three Principals below 80 then the certificate would be suspended with the client allowed 90 days to define an acceptable response to the reason(s) for the suspension. If the rescoring was to result in a performance indicator scoring less than 80 without leading to a Principle scoring less than 80, then a new condition to certification would be set and the client would be required to present a client action plan that would lead to the score achieving 80 or above with a defined time period.

Any suspension would only be lifted once there was evidence that the response had been effective in addressing the reason(s) for the suspension. If, within 90 days, the client was unable to define a response that was acceptable to the audit team then the certificate would be withdrawn.

We absolutely disagree with the scoring for the gillnet fishery under the performance indicators regarding its interactions with Endangered Threatened and Protected (ETP) species. Furthermore, the conditions that MSC would impose on the state and federal waters gillnet fisheries are neither meaningful nor practical to remedy the data deficits that led to the state and federal waters gillnet fishery scoring a 65 rather than an 80, a score that is itself inappropriately high.

Audit Team Response

We consider that the three scoring issues of SG80 at PI 2.3.1 are met due to the programs in place. While mortality and serious injury from various sources exceed the PBR, the programs in place have led to a noticeable reduction of the mortality and serious injury in the Northeast gillnet fishery and in the mid-Atlantic gillnets.

- Northeast sink gillnets: *“Average estimated harbor porpoise mortality and serious injury in the Northeast sink gillnet fishery during 1994-1998, before the Take Reduction Plan, was 1,163 (0.11). The average annual harbor porpoise mortality and serious injury in the Northeast sink gillnet fishery from 2005 to 2009 was 559 (0.16).”¹*
- Mid-Atlantic gillnets: *“Annual average estimated harbor porpoise mortality and serious injury from the mid-Atlantic gillnet fishery during 1995 to 1998, before the Take Reduction Plan, was 358 (CV=0.20). The average annual harbor porpoise mortality and serious injury in the mid-Atlantic gillnet fishery from 2005 to 2009 was 318 (0.26).”*

¹ Quotes are from the December 2011 report from NMFS: <http://www.nmfs.noaa.gov/pr/pdfs/sars/ao2011poha-gmeb.pdf>

NMFS has been proactive in the management of this species and has identified harbor porpoise as a strategic stock requiring regular updates. In particular, the NMFS 2011 assessment states that “....the HPTRP was amended on 19 February 2010 (75 FR 7383) to expand management areas and seasons in which pingers are required, as well as to increase efforts to monitor and enforce the plan. In addition, the New England portion of the HPTRP now includes consequence closure areas as a management measure strategy. These areas with historically high bycatch rates will close seasonally only if bycatch rates over two consecutive management seasons exceed a specified bycatch rate. This management strategy is intended to reduce harbor porpoise bycatch and to increase compliance with HPTRP regulations. Once triggered, these areas would remain in effect until bycatch levels achieve the zero mortality rate goal (ZMRG) or until new management measures are implemented in these areas”.

In our opinion, the key issue in relation to ETP species is that the information on the effects is deficient and this is dealt with in PI 2.3.3. We believe that the score of 65 allocated to PI 2.3.3 is warranted and reflects the difficulty in assigning interactions to a specific fishery or UoC. This has led to a condition being raised.

It is unclear how the stakeholder arrives at the opinion that the conditions that MSC (note that it is not the MSC but independent auditors) would impose are neither meaningful nor practical ... to remedy the data deficits. A condition is set when a PI fails to achieve a score of 80 and the client action plan must define the actions that will be taken to remedy that issue and lead to the score for the PI in question to achieve ≥ 80 in a defined time period, with milestones to measure the progress in implementing the client action plan. In any future annual audits stakeholders would be able to comment on the success (or otherwise) in implementation of the client action plan. As auditors we set the condition, we are not prescriptive but we do have to agree with what the client proposes, while whatever the client proposes has to be supported by those agencies that would be responsible for the implementation of the specific actions. We have reviewed and approved the client action plan and in specific relation to the conditions imposed and we are satisfied that if implemented successfully the fishery will have responded to the stakeholder's concern. In the case that the client action plan was not implemented as planned, this would lead to consideration of the sustainability of the fishery against the MSC standard.

With regard to effort directed toward spiny dogfish, we call the MSC's attention to the recent Federal Register notice that proposes an increase in the quota for spiny dogfish (77 Fed. Reg. 15991, March 19, 2012). With regard to spawning stock biomass (SSB) this Federal Register notice states in part: "...the spiny dogfish stock is not currently overfished or experiencing overfishing. However, while recruitment has increased in recent years, poor pup production from 1997-2003 is projected to result in significant declines in SSB from 2014-2020." We do not believe this fact was considered in the assessment, and it is an important consideration for the near term future of the stock's status.

Audit Team Response

This projection (uncertainty as opposed to fact) was considered by the team in the assessment. Please consider: that it is a projection with very high uncertainty (as is the case with all fish population projections); the Council has stated that future quotas will be adjusted (downward or upward) depending on level of recruitment to the adult biomass; thus, there is a harvest control rule in place that will lead to an appropriate adjustment to the quota. Under this rule, should the female abundance undergo a downturn in 2014, then the quota should be reduced accordingly; the annual audit would verify this situation.

In greater detail:

- The U.S. bases its fishery management objectives on biomass and mortality levels in relation to BRPs consistent with MSY (Kilduff et al. 2009). This approach used to assess the status of U.S. SD is consistent with the MSC standard.
- As stated in the report, recent documentation in the form of a 2011 MAFMC memo provides for a more explicit HCR as defined by the SSC. Previously, HCR for SD were more implicit. The main uncertainty which is the size of the adult population in the short to medium term as a result of previous low recruitments has been added to the rationale.
- As stated in our report: in 2011, a harvest control rule was put in place by ASMFC (ASFMC 2012) based on advice from SSC derived from Rago (2011) stating: “The SSC recommends a 1-year specification of ABC. The SSC applied the Council's risk policy for a typical life history, an estimated B_{2012}/B_{msy} ratio > 1 , and a CV of the OFL distribution of 100%. Using these parameters, the Council's risk policy implies a $P^* = 0.40$. Applying this P^* to the OFL produces an $ABC = 20,352$ mt (44.9 million pounds). The SSC notes that the stock biomass is projected to decline in the future because of poor recruitment in earlier years. This trend will mean that the ratio

of Bcurrent/Bmsy will become <1. As a result, the P value developed by the Council's risk policy will be lower, thereby leading to a reduced ABC in future years."* A multi-year OFL/ABC was also provided in the ASFMC Memo that indicates adaptation to the recruitment fluctuations. The key to this recommendation is that it allows a downward adjustment to the ABC in future years to account for the potential effect of past (1997- 2003) low past recruitment. If the exploitable population falls below target as is predicted, ABC can be adjusted accordingly. This advice applies to all waters. Thus, any downturn in SSB will result in a corresponding downturn in Quota.

In describing the various Council deliberations over quota recommendations, the Federal Register also notes that when the Mid-Atlantic Fishery Management Council (MAFMC) proposed a quota limit that would be higher than the 2011 allocation "spiny dogfish processors expressed concerns that the dramatic increase in quota and trip limits could lead to unstable market conditions (e.g., low or fluctuating prices), and may not be in the best long-term interests of the fishery (due to the projected future decline in SSB)." Although the MAFMC lowered its recommended increase in response to these concerns, the NMFS has nonetheless proposed a substantially higher quota than that of 2011 or that recommended by the MAFMC.

We absolutely question the sustainability of spiny dogfish stocks, given these acknowledged near-term concerns regarding spawning stock biomass.

Audit Team Response

Processor concerns about the market impact of increased quotas have no relevance to consideration of the sustainability of a fishery against the MSC standard. The NMFS quota is based on scientific advice in the context of the fishery being considered healthy i.e. it is not overfished and overfishing is not occurring. It is difficult to see in the context of documented evidence how the stakeholder absolutely questions the sustainability of the spiny dogfish stocks. As stated in the report, recent documentation in the form of a 2011 MAFMC memo provides for a more explicit HCR as defined by the SSC. Previously, HCR for SD were more implicit. The main uncertainty which is the size of the adult population in the short to medium term as a result of previous low recruitments has been added to the rationale. Other indicators of stock health are positive i.e. size structure, recruitment, sex ratio and the rigorous nature of the stock assessment that takes into account uncertainty.

2.3.1. Endangered Threatened and Protected Species—Status

The interactions of the gillnet fleet (in both state and federal waters) was scored 80 based, in part, on assurances in the 2010 BiOp regarding the dogfish fishery that a single lethal take in any one of the several fisheries that entangle North Atlantic right whales would not pose jeopardy to the species. This BiOp is being litigated. Independent of the litigation, this BiOp is being re-written by NMFS. The 2010 BiOp that is cited by the MSC authorized *no* lethal take of listed marine mammal species. Despite this, mortality is ongoing and additional measures need to be put in place. We refer the MSC to the most recent NMFS stock assessments documenting ongoing mortality above the Potential Biological Removal (PBR) level for both right and humpback whales.

Audit Team Response

After the information gathering phase was completed, the team compiled and analysed all relevant information (including technical, written and anecdotal sources) prior to scoring the fishery. The team discussed in detail the evidence available after the information gathering phase, weighed up the balance of evidence and used its judgment to agree a final score following the processes defined by MSC. We are not in a position to take into account the contents of a BiOp that will be published sometime in the future, nor consider the potential result of any litigation process. In the eventuality that the fishery is certified, the team completing future annual audits (in which stakeholders will be able to present evidence) will consider the implications of any new information and whether or not in the light of that information the fishery continues to meet the MSC standard for sustainable fisheries.

The MSC scoring system states that a score of 80 is warranted only if there is a strategy in place to minimize impact, that there is an objective basis for confidence that the strategy will work and that there is evidence that it is being implemented successfully. The failure of this fishery—in concert with others—to successfully reduce mortality of ETP species is revealed both in most recent NMFS stock assessments. The continued rate of entanglements that exceed the PBR gives clear indication that the strategy in place to reduce fishery impacts has not shown the hoped-for result and measures in the strategy to reduce risk appear to be inadequate. The fishery should score no better than a 60, although we doubt that even those criteria aptly describe the situation (i.e., a score of 60 requires that the status quo cannot assure that measures are in place are considered likely to minimize mortality and that a plausible argument can be made supporting this presumption). The unacceptable levels of fishery-related mortality and serious injury have necessitated re-consultation under Section 7 of the ESA and issuance of a new BiOp is expected by early summer.

Audit Team Response

After the information gathering phase was completed, the team compiled and analysed all relevant information (including technical, written and anecdotal sources) prior to scoring the fishery. The team discussed in detail the evidence available after the information gathering phase, weighed up the balance of evidence and used its judgment to agree a final score following the processes defined by MSC. We are not in a position to take into account the contents of a BiOp that will be published sometime in the future. In the eventuality that the fishery is certified, the team completing the future annual audits (in which stakeholders will be able to present evidence) will consider the implications of any new information and whether or not in the light of that information the fishery continues to meet the MSC standard for sustainable fisheries.

With regard to harbor porpoise, the state and federal waters gillnet fisheries also received a score of 80. Again, we believe this inappropriate. Although acknowledging that there is an issue with human-caused mortality (almost entirely in gillnets) exceeding the PBR, this is dismissed as a concern because there is no means of separating out the contribution of the spiny dogfish fishery from those of gillnets set to target other species. As a result, this fishery is inappropriately scored as though there *are* no impacts—an assumption that is completely ungrounded in fact. Further, there is serious question regarding the fishery's commitment to reducing bycatch of porpoises. The gillnet fishery was tasked with reducing mortality to a regulatorily mandated bycatch rate within two seasons, which it did not meet for the first of the two seasons over which compliance was to be assessed. The mortality levels exceed the maximum mortality of harbor porpoise deemed sustainable (i.e., the PBR level). This excess of mortality was largely due to the fishery *not* complying with mandatory risk reduction measures (e.g., mandatory use of acoustic "pingers"). See Key Outcomes Memorandum at: http://www.nero.noaa.gov/prot_res/porptp/doc/HPTRT%20-%20Key%20Outcomes1.pdf and letter to permit holders 2011: <http://www.nero.noaa.gov/nero/nr/nrdoc/11/11HarborPorpoiseBycatchUpdate.pdf>.

Audit Team Response

We believe that the score of 65 allocated to PI 2.3.3 is warranted given the difficulty in assigning interactions to a specific fishery or UoC. Accordingly, there is a condition raised on that issue. For PI 2.3.1, while we consider that the three scoring issues of SG80 are met on the basis of the programs in place, there is concern about the emerging issue of the total annual human-caused mortality exceeding the PBR. However, the contribution of the SD fishery to this has not been determined; as we cannot attribute the impact of the SD fishery on the basis of the information available, this concern is captured in the condition raised to PI 2.3.3 on the information available in relation to the difficulty in assigning interactions to a specific fishery or Unit of Certification. The key issue here is that the information on the effects is deficient and this is dealt with in PI 2.3.3.

The comments on non-compliance have been considered under PI 3.2.3 which has been redrafted and rescored, with the related conditions strengthened.

In addition to ETP marine mammal and turtle species, the MSC should have included in this section on ETP species an evaluation of the fishery relative to bycatch shortnose sturgeon. The evaluation acknowledges on page 78 that this species was listed under the ESA in 2012, yet it is not discussed in this portion of the evaluation. This is inappropriate. Page 79 acknowledges that effort is likely to increase in dogfish fishery in the mid-Atlantic where these nets may interact with sturgeon near their natal rivers and, indeed, as noted above, the NMFS is proposing a significant increase in quotas. However, the evaluation also cites the outdated 2010 BiOp that the fisheries were "not likely to adversely affect" sturgeon. This statement was made by NMFS prior to their listing. It may well have changed by now with the change in listing status. We have been told by the NMFS that a new BiOp is being prepared to better address impacts of the fishery on sturgeon, but it is not yet available. We believe that the evaluation should have better considered risks to this ESA-listed stock in its scoring of the fisheries. We also believe that final determination of the appropriateness of MSC certification must wait until an up-to-date impact evaluation can be made—after issuance of the BiOp for ETP species.

Audit Team Response

Please refer to our response to WWF.

After the information gathering phase was completed, the team compiled and analyzed all relevant information (including technical, written and anecdotal sources) prior to scoring the fishery. The team discussed in detail the evidence available after the information gathering phase, weighed up the balance of evidence and used its judgment to agree a final score following the processes defined by MSC. The listing of Atlantic sturgeon is recent. We cannot assume the outcome of the new BiOp; when evidence is available it will be considered. We are aware of the potential consequences on the population of Atlantic Sturgeon if any identified required actions are not taken. On that basis we will require an expedited first annual audit of the fishery as provided for under MSC Certification Requirements:

- “27.22.17 The CAB shall undertake an expedited audit, including as it determines necessary review of documents and an on-site audit if:
 - 27.22.17.1 The CAB becomes aware of major changes in relation to the circumstances of the fishery
 - a. A *_major change_* is one that is likely to have a material difference on the certification status. A PI score falling below 60 or outcome PI score falling below 80, or a change that could bring about a Principle Level aggregate score to drop below 80 shall be considered material differences to certification status.
- 27.22.17.2 Significant new information becomes available in relation to the circumstances of the fishery including during the period between the original assessment and the issue of a certificate.
 - a. Significant new information is that which is likely to have a material difference on the certification status. A PI score falling below 60 outcome PI score falling below 80, or a change that could bring about a Principle Level aggregate score to drop below 80 shall be considered material differences to certification status”.

The timing of the annual audit will reflect the deadline by which the management framework must respond to the listing and the publication of the new BiOp.

2.3.2. Endangered, Threatened and Protected Species—Management Strategy

This section is intended to score whether or not the operation of the fishery hinders recovery, poses risk of serious harm and/or minimizes mortality. We believe that the scoring for both federal and state waters gillnets is inappropriate at 85. With regard to harbor porpoise, as noted above, there has been a history of non-compliance with the federal take reduction plan. The most recent bycatch estimates for gillnet fisheries (of which the dogfish fishery is a part) shows that bycatch continues to exceed the PBR level despite management regulations. The most recent PBR is 703 and the 5-year average mortality in U.S. gillnets was 877 based on data through 2009 (Waring et al., 2011. Available at http://www.nmfs.noaa.gov/pr/pdfs/sars/ao2011_atlantic_draft.pdf). The failure to comply with requirements in the prior take reduction plan resulted in a new take reduction plan, cited by the MSC, that expanded requirements for use of acoustic pingers. The NMFS has already warned the fishery that it must improve compliance or face closure in 2012 (see letter to permit holders referenced above).

Audit Team Response

The comments on non-compliance have been considered under PI 3.2.3. We have reviewed the evidence presented in the letter at <http://www.nero.noaa.gov/nero/nr/nrdoc/11/11HarborPorpoiseBycatchUpdate.pdf> and we would respectfully suggest that the stakeholder interpretation is not an accurate representation of the contents. If it is found to be the case after the second year of the plan that the take has not been reduced then additional measures will be introduced for 2012 / 13 including the possibility of seasonal closures in specific management areas.

The MSC evaluation report (at page 83) cites the Mid-Atlantic Fishery Management Council stating that “*Additionally, protective measures under the Harbor Porpoise Take Reduction Plan (HPTRP) and Bottlenose Dolphin Take Reduction Plan (BDTRP) in combination with Federal SD harvest policy have been sufficient to reduce gillnet fishery interactions with harbor porpoises and bottlenose dolphins below PBR levels.*” As noted above, this is absolutely incorrect for harbor porpoise. The NMFS has documented in the most recent draft stock assessment that mortality *continues* to exceed PBR for harbor porpoise. Any reliance on this MAFMC statement is inappropriate.

Audit Team Response

The stakeholder may be referring to the Draft Marine Mammal Stock Assessment Report (April 2011) by NOAA Fisheries, Office of Protective Resources, found at http://www.nmfs.noaa.gov/pr/pdfs/sars/ao2011_atlantic_draft.pdf. In this document it is stated (p. 114) that “*population trends for this species have not been investigated*”. The basis for NOAA’s statement is that in order to determine PBR (which is the product of minimum population size, one-half the maximum productivity rate and a recovery factor) the logical first step is to have a current population survey. The most recent survey was conducted in 2006. This is not useful to estimate the current population. There is a management plan in place to reduce the catch of harbor porpoise.

The information we use on the harbor porpoise stock comes from the draft stock assessment (Waring 2010) that suggests that the total human-caused mortality now exceeds the PBR. This is clearly stated in the scoring comments for PI 2.3.1. The same report is also referenced in the paragraph preceding the reference to the Mid-Atlantic Fishery Management Council.

All the evidence provided is referenced. Our scoring was based on the Waring 2010 draft and we discounted the MAFMC 2010a information for that purpose. The following sentence has been added on page 83 (section 6.4.2) “We note that this conclusion is inconsistent with the scientific information provided by Waring 2010 (draft)”.

With regard to the bycatch of endangered right and humpback whales, as noted above, the NMFS is undertaking preparation of a new BiOp that will address the fact that gillnet fisheries (including the dogfish fishery) continuing to entangle and seriously injure or kill large whales. The current management strategy has not been successful in preventing entanglements that result in serious injury and death. For right whales, NMFS’ 2010 BiOp on the gillnet fisheries authorized no incidental take of this species or humpback and fin whales; yet mortality continues.

The most recent NMFS stock assessment provides a PBR of 0.7 for right whales and 1.1 for humpback whales. However, the average fishery-related mortality in the US is 3.6 per year for humpback whales, and U.S fisheries are also over PBR for right whales, with NMFS noting that for both species mortalities are based on stranded carcasses and are thus likely an underestimate. The stock assessment for humpbacks also acknowledges that in 2008, at least 2 humpback whales were bycaught in gillnets, one of which may have suffered a serious injury (analyses ongoing). Records by the NMFS show that humpbacks are killed or seriously injured (i.e., likely

to die) as a result of gillnet entanglement virtually every year. A 2005 analysis by Johnson and colleagues found that gillnet gear was the most frequent source of entanglements for humpback whales (11 of 25 documented entanglements) (Johnson A, Salvador G, Kenney J, Robbins J, Kraus S, Landry S, Clapham P (2005) Fishing gear involved in entanglements of right and humpback whales, *Marine Mammal Science*.21:635–645).

Even a cursory reading of the most recent NMFS take reduction plan shows almost no new measures imposed to protect endangered whales from entanglement in gillnets and our organizations have filed suit against the agency as a result of mortality exceeding allowable levels in the BiOp and because measures in place do not address a number of sources of risk.

Audit Team Response

After the information gathering phase was completed, the team compiled and analysed all relevant information (including technical, written and anecdotal sources) prior to scoring the fishery. The team discussed in detail the evidence available after the information gathering phase, weighed up the balance of evidence and used its judgment to agree a final score following the processes defined by MSC. We are not in a position to take into account the contents of a BiOp that will be published sometime in the future, nor consider the potential result of any litigation process. In the eventuality that the fishery is certified, the team completing the future annual audits (in which stakeholders will be able to present evidence) will consider the implications of any new information and if in the light of that information the fishery continues to meet the MSC standard for sustainable fisheries.

Given that the management plans for both harbor porpoise and for large whales are under reconsideration by the NMFS, and that additional fishery restrictions likely as a result of ongoing excessive levels of entanglement of these ETP species; we believe that there is no justification for scoring the fisheries at the minimal level of 60, let alone the score of 80-85 that was assigned.

Audit Team Response

The stakeholder states an opinion that management plans reported to be under reconsideration will introduce additional fishery restrictions. Once these documents have been prepared and reviewed, if the fishery is certified according to the MSC standard then future annual reviews will consider if in the light of the up-dated management plans the scoring of performance indicators should be reviewed. The existing scoring by the team followed detailed discussion of the evidence available after the information gathering phase. The team weighed up the balance of evidence and used its judgement to agree a final score following the processes defined by MSC. We ask that the stakeholder review the comments made by WWF in this respect (see below).

2.3.3. Endangered, Threatened and Protected Species—Information/Monitoring

Although federal fishery observers are placed aboard the vessels being considered for certification, and they can and do report bycatch of harbor porpoises and dolphins, the NMFS does not provide information in its stock assessment reports that identify the target species of any particular gillnet that resulted in the mortality of a marine mammal (e.g., whether the target was cod or flounder or dogfish). This information may exist in internal observer reports but is not available to the public (nor, so far as we are aware, to the MSC). As such we disagree that information “is broadly adequate” to understand the impact of the gillnet fishery. Indeed we have no idea for most entanglements the nature of the target species. We have reason to believe that the dogfish gillnet fishery has a significant problem with entanglement-related mortality of harbor porpoise, simply because it is a substantial part of the gillnet effort, though the harbor porpoise take reduction team (on which our organizations sit) was told that dogfish nets were a significant contributor to porpoise mortality, particularly in the mid-Atlantic. However, contrary to the assertion that there is “broadly adequate” information on the impact of the fishery, we do not know specifically what its impacts are (e.g., it may be that virtually all or, conversely, very little current ETP mortality may be attributable to gillnets targeting dogfish).

Audit Team Response

The three issues under SG60 of PI 2.3.3 are: Information is adequate to broadly understand the impact of the fishery on ETP species; Information is adequate to support measures to manage the impacts on ETP species; Information is sufficient to qualitatively estimate the fishery related mortality of ETP species (our emphasis on key words and phrases).

After careful thought we consider that the information is adequate to broadly understand the impact. There are issues with the information available and this is reflected in the score of 65 and the conditions, While attribution of the effects cannot be done at the SD fishery level (which led to conditions), there is enough information to broadly understand these effects. The monitoring programs, the estimates of incidental takes, the entanglement reports all provide information that is sought by those who are involved in the scientific assessments of the ETP species. This is a testimony of the contribution of this information to the development of a broad understanding of the impact that is obtained through these assessments.

With regard to the entanglement of large whales, there is absolutely no information available on the species being targeted by gillnets found entangling whales, because the gear contains insufficient identifying information to allow tracing to its owner so that interviews might reveal where, when and for what target the net was set. Observers placed aboard federally permitted gillnet vessels have virtually no opportunity to observe entanglements, as nets are not tended and large whales typically are strong enough to break free with entangling gear on them, such that observers would generally have no opportunity to witness an entanglement. In the rare event that the fisherman is with his gear at the time of the entanglement (as was the case twice in 2008 according to the NMFS stock assessment for humpbacks) he may be able to assist with freeing the whale; but, again, records available to the public do not specify the target of the net. Scoring the gillnet fishery 65 grossly misrepresents the reality of the ability to understand and estimate

mortality for large endangered whales. Even the minimum criteria are not satisfied, because we are allowed virtually no information on the target species of the gillnets that are entangling and killing large whales in excess of their PBR and in excess of the incidental take statement in the NMFS BiOp.

Audit Team Response

The issue identified by the stakeholder led to a number of Conditions related to PI 2.3.3. We find the stakeholder comments to support the need for the Conditions raised.

13.7.8 Federal Gillnet Fishery (Condition 9). And 13.7.11 State Gillnet Fishery (Condition 12).

In our comments, we have combined concerns for both state and federal fisheries as both are prosecuted similarly and both have the same deficiencies and conditions.

This section specifies that "Sufficient data are available to allow fishery related mortality and other impacts of the federal Spiny Dogfish gill net fishery on relevant ETP species to be quantitatively estimated," and it provides milestones for various future reviews. We note that it is not until the 4th year after certification has already been granted that data are expected to meet the deficiencies that are identified (i.e. that there are not data to allow understanding of the true impact of the fishery on EPT species). Rather than delay certification until such time as there are data to properly assess impacts of the fishery; it will be certified without this understanding. This seems inappropriate.

Audit Team Response

The process allows us to set conditions to certification that will need to be addressed in a client action plan. Subsequently, annual audits will address the progress or other wise of implementing the client action plan according to the established milestones. This approach is part of the MSC process; if the stakeholder considers that process to be inappropriate then the point should be taken up with the MSC. As independent auditors we assess the fishery against the MSC standard using the MSC defined methodology and certification requirements.

Further, this deficit cannot be remedied unless and until the NMFS collects and reports data on fisheries by target species rather than by common gear type as it does currently. The NMFS does not identify target species and has stated to various task forces of which the HSUS is a part, that it cannot readily do so. Further, increasing federal observer coverage (as suggested) cannot assist in understanding of impacts of the fishery on endangered right and humpback whales, as the Catch Per Unit Effort is so low even though the overall impact to the population is significant and troublesome (that is, the likelihood of any particular piece of gear entangling an endangered whales is low even though the odds of a whale becoming entangled in its lifetime is significant). Self-reporting, which is also suggested, is also of little use. Ignoring the dubious assumption that people willingly self-report things that can be used against them, the most likely indicator that an entanglement of a large whale has occurred would be the disappearance of a section of gillnet. But a fisherman will likely not know why a gillnet disappeared (e.g., a recreational vessel could have fouled it, a trawler towed through it, or a whale became entangled and swam off with the net wrapped around it).

Audit Team Response

The stakeholder forwards a number of opinions without any supporting evidence. We have reviewed the client action plan and consider it as an appropriate vehicle to gain the information required.

We find it something of an oxymoron to both provide the fishery with a score of 80, and stating that data on impacts are broadly adequate to show no impact, yet (through this condition) indicate that data are currently insufficient data to assume there is no impact and the fishery needs to work with regulators to obtain this information. Further, there is almost no ability to assure that such data are possible to obtain, since it depends on a complete re-vamping of how the NMFS categorizes fisheries relative to marine mammal bycatch (*i.e.*, categorizing fisheries in their Marine Mammal Authorization Program by target species rather than by gear type).

Audit Team Response

Please review previous comments relating to the scoring of PI2.3.1 and PI2.3.3. The assessment procedure that we followed fully accords with the certification requirements defined by the MSC. We do not consider it to be an oxymoron to conclude that the fishery meets the SG80 criteria for status (PI 2.3.1) (where the issues are: the effects of the fishery are known and are highly likely to be within limits of national and international requirements for protection of ETP species; direct effects are highly unlikely to create unacceptable impacts to ETP species; and indirect effects have been considered and are thought to be unlikely to create unacceptable impacts); but conclude that while the information is adequate to broadly understand the impacts it is not sufficient to support a full strategy nor to quantitatively estimate the impact of the fishery. We remind the stakeholder that Principle 2 relates to the impact of the fishery under assessment; while the stakeholder presents a number of arguments about the impact of gill netting, this is not supported by any documented evidence that the SD gill net fishery is not carried out sustainably in the context of the MSC standard. The audit team presents an independent assessment of the fishery against the MSC standard – it does not try to interpret that standard. The conditions that have been set for PI2.3.3 have the aim of correcting the situation and to provide the data needed to allow the fishery to achieve a score of ≥ 80 for PI2.3.3 within the defined time horizon. In the case that the fishery is certified, annual audits would assess whether or not the client action plan was being implemented according to schedule.

13.7.14 All Fisheries: Conditions 15 and 16

This section pertains to “Compliance and enforcement: monitoring, control and surveillance mechanisms ensure the fishery’s management measures are enforced and complied with.” While the dogfish gillnet fleet may be in compliance with federal mandates under the NMFS Take Reduction Plan for Atlantic Large Whales, they are generally *not* in compliance with those of the NMFS Harbor Porpoise Take Reduction Plan. In fact, the lack of compliance with regulatory mandates to use acoustic pingers to reduce bycatch of harbor porpoise was the reason the plan had to be revised to impose additional strictures. Further, despite these new mandates, the fishery has not yet met targets for compliance (Palka, pers. comm.). Should the report from NMFS on the two-year compliance rate (due by the end of May 2012) indicate that the fishery has been largely out of compliance as reflected in bycatch rates, would the MSC deny or rescind certification? We believe that final scoring and potential certification should be delayed until the NMFS completes its evaluation of compliance this summer and the MSC can evaluate the sufficiency of compliance with regulatory mandates.

Audit Team Response

The comments on non-compliance have been considered under PI 3.2.3 and this has led to a redrafting of the scoring table, changes in some of the scores for that PI and redrafting of the conditions. Any new information e.g. the NMFS report on the two-year compliance rate would be considered in any future annual audit if the fishery was to be certified. The annual audit would rescore performance indicators as required, and if this led the overall score for a Principal to reduce below 80 then the certificate would be suspended and within 90 days the client would be required to detail a response to the issue(s) that resulted in the suspension. The suspension would not be lifted until the response was judged to have been successfully implemented. If a client did not provide an acceptable response with 90 days then the certificate would be withdrawn. In the case that a rescored PI had a score of < 80 without reducing the score for the Principal to < 80 , then a new condition to the certification would be raised and the client would have to respond with a client action plan that would increase the score of the specific PI to ≥ 80 within a defined time period. As commented elsewhere, the fishery was scored on the basis of information that was available in the information gathering phase, although this has been up-dated as needed due to the extended nature of the assessment process. However, it would be both impractical and unrealistic to take into consideration the possibility that information that may become available in the future may result in a new scoring – that is one of the purposes of the annual audit. Furthermore, the assessment process cannot be delayed indefinitely in the expectation that new documented evidence (that may either favour certification or lead to a fishery failing the assessment) will become available.

Further, without seeing the conditions imposed by NMFS under the new BiOp that will address bycatch of shortnose sturgeon and other ETP species, how can the MSC assume that a fishery is able to comply or merits the scoring assigned? This too argues for waiting until impending information is available before making a rush to judgment on the fishery and its ability to comply with, as yet unspecified, regulatory mandates.

Audit Team Response

The MSC process requires a fishery to be audited on an annual basis and allows for an expedited annual audit to take place should the circumstances merit. In recognition of the issues that affect this fishery, especially related to component 2.3, we will require an expedited first annual audit to review any new information that may become available after the fishery is certified (if that proves to be the case). Once again we emphasise that we assess a fishery against the MSC standard on the basis of documented evidence, not on the basis of documents that may be available in the future may and their possible content.

With regard to Principle 1, there is some concern that poor pup production may lead to short-term declines in the target species (spiny dogfish). This challenges the sustainability of the harvest, particularly in light of the NMFS proposal to significantly increase harvest quotas.

Audit Team Response

The increased quota has been authorised by NMFS on the basis of scientific advice on stock status in the context of a finding that the stock has been rebuilt and it is not overfished and overfishing is not occurring. The report text has been amended to include the rationale for the 2012 quota.

Concerning the stakeholder claim about poor pup production (recruitment); it is not possible to reliably predict recruitment since stock / recruitment relationships are highly variable; but, from what has been observed, as the SSB has increased, so has recruitment (with an increase in the SSB of females and an increase in the number of pups). We cannot identify any evidence that recruitment has been lower than expected. The initial number of recruits in a given year is only part of the story; their survival is a key issue. The fact that the stock recovered more quickly than expected would indicate that recovery of the SSB was more reliant on the increased survival of recruits rather than their initial number.

Based on the assessment documents, our report points out:

1. Annual estimates of biomass of SD ≤ 35 cm (1-2 years old) indicated highly variable recruitment between 1968 and 1996.
2. From 1997 to 2003, pup production was a record low. Since that date recruitment has improved.
3. Recruitment in 2009 was the fifth highest in the 42-year NEFSC spring survey time series.
4. Recruits per spawner was highly variable among years but was the fifth highest value in 2009.

At the same time, work is being done to improve understanding of the stock/recruit relationship adds to the integrity of the process. A size- and sex-structured equilibrium life history model is used to estimate yield per recruit and female pups per recruit corresponding to various levels of F and the minimum size at entry to the fishery.

Average pup length has increased rapidly in the last three years from 0.055 to 0.08 kg which is similar to the size observed prior to the decline in stock.

With regard to Principle 2, the continued serious injury and mortality of ETP marine mammals raises concern. Mortality and serious injury of large endangered whales (including critically endangered North Atlantic right whales) continue to exceed PBR despite the NMFS denying authorization for any takes under the 2010 BiOp and despite an extant "management" plan. The NMFS is re-doing the outdated BiOp on which the MSC relied. Taking harbor porpoise and endangered large whales in excess of PBR poses a threat to those species and thus constrains a significant element in the ecosystem.

Audit Team Response

Please see previous comments.

With regard to Principle 3, the management regimes in place are not sufficient at this time. The gillnet fishery has not properly complied with management imperatives. The NMFS will issue a summary of the compliance (or, more to the point, the lack of compliance) with regulatory mandates that were imposed 2 years ago. Preliminary information indicates that compliance is low and thus the management is insufficient to constrain takes. Further, the NMFS will be issuing a new BiOp on the fishery to address the serious injury and mortality of endangered large whales that continues in spite of the management regime that is in place but is clearly not sufficient. The gillnet fisheries' impact on sturgeon, which are newly listed under the ESA, is not fully understood, nor can it be until production of the BiOp that will not be available in the expedited time frame that the MSC has set out for certifying this fishery.

Audit Team Response

Please refer to previous comments. The stakeholder is mistaken in claiming that MSC has set out an expedited time frame for this assessment. Indeed, for a variety of reasons (including the comprehensive nature of the work undertaken due to the known issues within the fishery) the time spent on completing the assessment to the present stage has been much longer than originally envisaged.

Much of the information in Section 2.3 that pertains to interactions of the gillnet fishery with right whales relies on the 2010 BiOp that was issued by the NMFS. This BiOp should not be the basis for the evaluation of impacts of the fishery or sufficiency of management regimes, as it does not represent the current status of the fishery with regard to impacts on non-target ETP species. As we have previously stated, the NMFS is currently undertaking re-issuance of a BiOp as a result of the recent listing of Atlantic sturgeon under the ESA (and interactions of this species with gillnet fisheries) and it will presumably address critique raised in litigation that was filed regarding the fisheries having exceeded the incidental take statement in that BiOp.

In the filings with the court, the NMFS averred that they had initiated re-consultation on February 12, 2012. ESA and the Section 7 regulations (50 CFR 402.14) require that formal consultation be concluded within 90 calendar days of initiation, and that a BiOp be completed within 45 days after the conclusion of formal consultation. We believe that it behooves the MSC to wait until issuance of this BiOp before making conclusions regarding the impact of this fishery on ETP species, including marine mammals and sturgeon which are the subject of a revised BiOp. To conclude that the fishery is not likely to adversely affect short nose sturgeon and does not pose jeopardy to endangered marine mammals based on a now-outdated BiOp—when a new one is in the offing—would be premature and irresponsibly risk prone.

Audit Team Response

To repeat our response to other points made by the stakeholder. After the information gathering phase was completed, the team compiled and analysed all relevant information (including technical, written and anecdotal sources) prior to scoring the fishery. The team discussed in detail the evidence available after the information gathering phase, weighed up the balance of evidence and used its judgment to agree a final score following the processes defined by MSC. We are not in a position to take into account the contents of reports that may be published sometime in the future, nor consider the potential result of any litigation process. In the eventuality that the fishery is certified, the team completing the future annual audits (in which stakeholders will be able to present evidence) will consider the implications of any new information and if in the light of that information the fishery continues to meet the MSC standard for sustainable fisheries.

The stakeholder presents a number of unsupported conclusions on the findings of a review that is not yet available. We do not consider that our assessment is premature and irresponsibly risk prone. We have followed the MSC guidelines in considering all the evidence available in scoring the fishery and we would be irresponsible if we took into account factors that involve supposition – not only about the findings, conclusions and recommendations of the documents but also the lack of an adequate and timely response by the management authorities to those documents.

No decision on certification should be made until such time as the MSC has evaluated all the most relevant and recent information on the fishery. Reliance on an outdated BiOp, outdated statements by the MAFMC and making the assumption that a *lack* of objective data and information on impacts of gillnets is the same thing as *no* impact, would be inappropriate and a disservice to consumers who rely on certification as being the best information available on

sustainable fisheries. We do not believe that the information used in this evaluation meets that standard.

Audit Team Response

We emphasise that as independent auditors we have assessed the fishery against the MSC standard according to the guidelines established by MSC. We have made a recommendation on the basis of documented evidence; the stakeholder contests that recommendation largely on the basis of a perception about the content of future reports and the response of the management authorities.

WWF International

WWF has considered the draft assessment report for the US Atlantic spiny dogfish fishery. We believe that the assessment team has considered the issues raised thus far by stakeholders and scored the fishery according to the MSC Certification Requirements. However, we are concerned about the proposed certification of a fishery known to have significant impacts on retained, discarded, and ETP species, as well as a history of management failure.

Audit Team Response

The team acknowledges the stakeholder's recognition that we have considered the issues raised thus far by stakeholders and scored the fishery according to the MSC Certification Requirements. We have recommended the certification of the fishery following compilation and analysis of all relevant information (including technical, written and anecdotal sources) prior to scoring the fishery. The team discussed evidence available after the information gathering phase in detail, weighed up the balance of evidence and used its judgment to agree a final score following the processes defined by MSC. In scoring the fishery we considered in full the potential impacts of the fishery in relation to all performance indicators. We acknowledge that in previous years management of the fishery was not optimal, and this led to the over fishing of the resource and the subsequent recovery programme. However, we do not consider it objective to judge the future effectiveness of management on past history – if there is weakness in the future and the management authorities take actions / do not take actions that affect the sustainability of the fishery against the MSC standard then any future annual audits would review the objective evidence and take the steps necessary.

Our issue of greatest concern is the impact of the gill net fishery on Atlantic sturgeon¹. As the report notes, Atlantic sturgeon was listed under the US Endangered Species Act in January 2012. The US National Marine Fisheries Service has indicated that the loss of only a few adult females from the Delaware River population would hinder recovery, and that the populations in the New York Bight and Chesapeake Bay are at risk of extinction. Although Atlantic sturgeon is now protected, the spiny dogfish fishery management plan does not currently take the listing into account. WWF is not convinced that the current spiny dogfish management framework, which has a history of failure, will adequately address the issue quickly enough to not hinder the recovery of Atlantic sturgeon.

Audit Team Response

The management framework must respond in the time provided by the legislation. If it is found in a future audit that the management framework has not responded appropriately there would be a rescoring of specific performance indicators, and if this led to the fishery failing to meet the MSC standard then the certification would be suspended, with the potential for withdrawal if the CAB considers that there has not been an adequate response to the cause(s) of the suspension. The stakeholder bases its argument on the previously identified and acknowledged weakness of the spiny dogfish management authority; that this past weakness may continue into the future is a subjective point of view that has no supporting evidence. At the opportune moment the CAB will audit the response of the management framework to the listing of Atlantic sturgeon.

WWF realizes that the current MSC guidance does not require the assessment team to take the fishery's response to the ESA listing of Atlantic sturgeon into consideration in its analysis as the listing occurred after the end of the information-gathering phase. Instead (and following MSC guidance), the report notes that the issue will be monitored during annual audits. Because the status of Atlantic sturgeon is so critical, WWF does not feel that this approach is sufficient. Notably it illustrates that in this case, especially, the MSC Certification Requirements are not a correct or thorough reflection of the MSC standard for sustainable fishing.

Audit Team Response

The team audits a fishery against the MSC standard. As the stakeholder may be aware, our own work is audited to ensure that we have applied the standard correctly. On that basis, our view is that any stakeholder issues with the standard should be taken up with the MSC; it is not for us to determine if the MSC Certification Requirements are correct or whether or not they reflect the MSC standard for sustainable fishing.

Certainly if the fishery were to be scored at present, Pls 2.3.1, 2.3.2, and 2.3.3 would score below 60 and the fishery would be ineligible for MSC certification. WWF believes that due to the severity of the status of Atlantic sturgeon, the spiny dogfish fishery should be required to address impacts on the population(s) before being certified as a sustainable fishery. If the impacts of the fishery on Atlantic sturgeon are not addressed now, this potential MSC-certified fishery may very well lead to the devastation of an ESA-

listed species, and that does not align with the MSC's mission to contribute to ocean health by recognising and rewarding sustainable fishing practices.

At an absolute minimum, WWF believes that an expedited first audit is necessary and critical as the listing of Atlantic sturgeon is a 'major change' in relation to the circumstances of the fishery and likely to have a material difference on the certification status.

Audit Team Response

After the information gathering phase was completed, the team compiled and analyzed all relevant information (including technical, written and anecdotal sources) prior to scoring the fishery. The team discussed in detail the evidence available after the information gathering phase in detail, weighed up the balance of evidence and used its judgment to agree a final score following the processes defined by MSC.

Regarding Atlantic sturgeon we understand the following.

- The Chesapeake Bay, New York Bight, Carolina, and South Atlantic populations of Atlantic sturgeon will be listed as endangered, the Gulf of Maine population, as threatened.
- However NOAA states that these listing decisions will not have an immediate impact on fishing. It has been illegal to fish for, catch or keep Atlantic sturgeon for more than a decade. So, The US government is not going to stop all activity in the range of sturgeon. There will however be mitigation - NOAA personnel will work with fishery management councils, interstate fisheries managers, state agencies, and the fishing industry to find ways to further reduce bycatch of Atlantic sturgeon in federal and state waters without unduly hampering fishing activities.
- The majority of harm to sturgeon occurs in the rivers (not in marine fisheries). At sea (minority of potential harm), there are many fisheries that could potentially harm sturgeon. Dogfish fishery is possibly a minor component within sea fisheries since it a minor fishery although sources of harm are probably not well quantified.
- Stopping the dogfish fishery or more to the point, not certifying the fishery will not alleviate all or even a significant portion of harm to sturgeon.

It appears that the stakeholder is effectively saying that no fishery should be allowed to take place within the known range of the sturgeon. This is not an issue of the dogfish fishery certification per se but one of a broader issue relevant to any activity that could potentially harm sturgeon. The USA Endangered Species Act is the implement by which protection of an endangered species is put into effect. If under that Act, any activity that could potentially harm sturgeon is prohibited then that would include fisheries such as for dogfish in the range of sturgeon.

What needs to be determined is the degree of overlap of the dogfish fishery with sturgeon and the degree and amount of harm that fishery imposes. To this point it has primarily been speculation.

On that basis we consider that:

- There is lack of evidence to support the subjective point of view of the stakeholder that the "potential MSC-certified fishery may well lead to the devastation of an ESA-listed species" (our emphasis).
- We do not agree with the stakeholder statement that the fishery would score less than 60 on PIs 2.3.1, 2.3.2 and 2.3.3; in that case the scoring would take into consideration how the management authorities have taken actions to address the impacts of the fishery on the effected populations.
- We argue that the management authorities should have the opportunity to respond to the listing (as they are legally obliged to do).

However, we are aware of the potential consequences on the population of Atlantic Sturgeon if any identified required actions are not taken. On that basis we will require an expedited first annual audit of the fishery as provided for under MSC Certification Requirements:

- "27.22.17 The CAB shall undertake an expedited audit, including as it determines necessary review of documents and an on-site audit if:
 - 27.22.17.1 The CAB becomes aware of major changes in relation to the circumstances of the fishery
 - a. A 'major change' is one that is likely to have a material difference on the certification status. A PI score falling below 60 or outcome PI score falling below 80, or a change that could bring about a Principle Level aggregate score to drop below 80 shall be considered material differences to certification status.
 - 27.22.17.2 Significant new information becomes available in relation to the circumstances of the fishery including during the period between the original assessment and the issue of a certificate.

- *a. Significant new information is that which is likely to have a material difference on the certification status. A PI score falling below 60 outcome PI score falling below 80, or a change that could bring about a Principle Level aggregate score to drop below 80 shall be considered material differences to certification status”.*

The timing of the annual audit will reflect the deadline by which the management framework must respond to the listing.

Appendix 5: Registered companies / vessels within Unit of Certification: eligible to sell MSC certified product

All fishing vessels licensed to fish dogfish in Federal waters and the States of Maine, New Hampshire, Massachusetts, Rhode Island, New Jersey, Virginia, North Carolina using trawl, gill net and long line will be eligible to sell MSC certified product.

See <http://www.nero.noaa.gov/permits/data/>