



## ALASKA RESPONSIBLE FISHERIES MANAGEMENT CERTIFICATION

### Final Assessment Report

*For The*

## Alaska Pacific Sablefish (Black cod) Commercial Fishery (200nm EEZ)

*Client*

**'Eat on the Wild Side' (FVOA)**

*Facilitated By*

**Alaska Seafood Marketing Institute (ASMI)**

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## Foreword

The Alaska Responsible Fisheries Management (RFM) Standard Version 1.3 is composed of Conformance Criteria and is based on the 1995 FAO Code of Conduct for Responsible Fisheries and the FAO Guidelines for the Eco-labelling of Fish and Fishery Products from Marine Capture Fisheries adopted in 2005 and amended/extended in 2009. The Standard also includes full reference to the 2011 FAO Guidelines for the Eco-labelling of Fish and Fishery Products from Inland Fisheries which in turn are now supported by a suite of guidelines and support documents published by the UN FAO. Further information on the Alaska RFM program may be found on its website:

<http://www.alaskaseafood.org/rfm-certification/>

### Notice of Correction

This Report represents a correction to the original Report published on 9<sup>th</sup> January 2017 in which Clauses 6.2 and 6.4 contained incorrect interpretations of the North Pacific Fishery Management Council's Harvest Control Rule for sablefish and the Minimum Stock Size Threshold (MSST) reference point.

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## Acronyms

ABC	Acceptable Biological Catch
ADFG	Alaska Department of Fish and Game
AFA	American Fisheries Act
AFDF	Alaska Fisheries Development Foundation
AFSC	Alaska Fisheries Science Center
ASMI	Alaska Seafood Marketing Institute
BOEM	Bureau of Ocean Energy Management
BOF	Board of Fisheries
BSAI	Bering Sea and Aleutian Islands
CCRF	Code of Conduct for Responsible Fisheries
CDQ	Community Development Quota
CFEC	Commercial Fisheries Entry Commission
CPUE	Catch per Unit Effort
EIS	Environmental Impact Statement
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
ESA	Endangered Species Act
FAO	Food and Agriculture Organization of the United Nations
FMP	Fishery Management Plan
FVOA	Fishing Vessel Owners Association
GOA	Gulf of Alaska
GHL	Guideline Harvest Level
HAPC	Habitat Areas of Particular Concern
IFQ	Individual Fishing Quota
IPHC	International Pacific Halibut Commission
IRFA	Initial Regulatory Flexibility Analysis
IRIU	Improved Retention/Improved Utilization
LLP	License Limitation Program
MSFCMA	Magnuson-Stevens Fisheries Management and Conservation Act
MSST	Minimum Stock Size Threshold
mt	Metric tons
MSY	Maximum Sustainable Yield
NEPA	National Environmental Policy Act
nm	Nautical miles
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPFMC	North Pacific Fishery Management Council
NPRB	North Pacific Research Board
OFL	Overfishing Level
OLE	Office for Law Enforcement
OY	Optimum Yield
PRD	Protected Resources Division

PSC	Prohibited Species Catch
RACE	Resource Assessment and Conservation Engineering
REFM	Resource Ecology and Fisheries Management
RFM	Responsible Fisheries Management
SAFE	Stock Assessment and Fishery Evaluation (Report)
SSC	Scientific and Statistical Committee
TAC	Total Allowable Catch
UAF	University of Alaska
USCG	U.S. Coast Guard



## **i. Summary and Recommendations**

This document is the reassessment report (ref AK/SAB/002./2016) for the US Alaska Sablefish fisheries first certified to the Alaska RFM Program, on October 11th 2011.

The US Alaska Sablefish fishery employs benthic longline, pot and trawl gears within Alaska's jurisdiction (200 nautical miles EEZ), under federal [National Marine Fisheries Service (NMFS)/North Pacific Fishery Management Council (NPFMC)] and state [Alaska Department of Fish and Game (ADFG)] management.

The reassessment was conducted according to the Global Trust procedures for AK Responsible Fisheries Management Certification using the Alaska Responsible Fisheries Management (RFM) Standard Version 1.3.

The reassessment was conducted by a team of Global Trust appointed Assessors comprising of two members of Global Trust's internal staff and an externally contracted fishery expert. Details of the assessment team are provided in [Appendix 1](#).

The main Key outcomes have been summarized in Section 5 "[Assessment Outcome Summary](#)".

The fishery achieved full conformity to each of the conformance criteria evaluated.

The Assessment Team recommends that the management system of the applicant fishery, the US Alaska Sablefish fishery, under federal (NMFS/NPFMC) and state (ADFG) management, fished with benthic longline, pots and trawl gear (within Alaska's 200 nm EEZ), should be awarded continuing certification to the Alaska RFM Certification Program.

**ii. Schedule of Key Assessment Activities**

<b>Assessment Activities</b>	<b>Date(s)</b>
<b>Appointment of Reassessment Team</b>	March 14 <sup>th</sup> 2016
<b>On-site Witnessed Reassessment and Consultation Meetings</b>	May 22 <sup>th</sup> – 25 <sup>th</sup> 2016
<b>Draft Reassessment Report</b>	August 25 <sup>th</sup> 2016
<b>External Peer Review</b>	September 25 <sup>th</sup> 2016
<b>Final Reassessment Report</b>	9 <sup>th</sup> January 2017
<b>Certification Review/Decision</b>	9 <sup>th</sup> January 2017

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## 1. Introduction

The US Alaska Sablefish (*Anoplopoma fimbria*) fishery, employing benthic longline, pot and trawl gears within Alaska's jurisdiction (200 nautical miles EEZ), under federal (NMFS)/(NPFMC) and state (ADFG) management, was reassessed against the requirements of the Alaska RFM Certification Program. This is a voluntary program for Alaska fisheries and has been supported by ASMI who wish to provide an independent, third-party certification program that can be used to verify that Alaska fisheries are responsibly managed according to the FAO Code of Conduct for Responsible Fisheries.

The request for reassessment was made by the Fisheries Vessel Owner Association (FVOA), and was conducted by Global Trust Certification Ltd.

The reassessment was conducted according to the Global Trust procedures for Alaska RFM Certification in accordance with EN45011/ISO/IEC Guide 65 accredited certification procedures. The reassessment is based on the criteria specified in the Alaska Responsible Fisheries Management (Alaska RFM) Standard Version 1.3. The Alaska RFM Standard is composed of conformance criteria based on the 1995 FAO Code of Conduct for Responsible Fisheries and the FAO Guidelines for the Eco-labelling of Fish and Fishery Products from Marine Capture Fisheries adopted in 2005 and amended/extended in 2009; hereafter generally referred to as the Alaska RFM Criteria. The Standard also includes full reference to the 2011 FAO Guidelines for the Eco-labelling of Fish and Fishery Products from Inland Fisheries which in turn are now supported by a suite of guidelines and support documents published by the UN FAO.

The reassessment is based on 6 major components of responsible management that are derived from the FAO Code of Conduct for Responsible Fisheries and Guidelines for the Eco-labelling of products from marine capture fisheries:

- A. [The Fisheries Management System](#)
- B. [Science and Stock Assessment Activities](#)
- C. [The Precautionary Approach](#)
- D. [Management Measures](#)
- E. [Implementation, Monitoring and Control](#)
- F. [Serious Impacts of the Fishery on the Ecosystem](#)

These six major components are supported by 13 fundamental clauses which are then divided into sub-clauses. Collectively, these form the Alaska RFM Conformance Criteria against which a fishery applying for certification is assessed.

The reassessment comprised of assessment planning, scheduling of onsite audits, document reviews, scoring of the fishery against each clause, draft report writing, Peer Review, Public comment draft report and final report for certification decision. At various stages in the reassessment process, information pertaining to the step in the reassessment process has been posted on the Alaska Seafood Marketing Institute (ASMI) website at the following address: <http://www.alaskaseafood.org/rfm-certification/certified-fisheries-companies/certified-fisheries/> and at GT website at <http://www.gtcert.com/fisheries/>

A summary of the consultation meetings is presented in section 5. Assessors comprised of both external contracted fishery consultants and Global Trust internal staff (Appendix 1). Peer Reviewers comprised of external contracted fisheries consultants (Appendix 2).

This report documents each step in the reassessment process and the recommendation for certification decision according to the requirements of ISO/IEC Guide 65 accredited certification.

### **1.1. Recommendations of the Assessment Team**

The Assessment Team recommends that the management system of the applicant fishery, the US Alaska Sablefish fishery, under federal (NMFS/NPFMC) and state (ADFG) management, fished with benthic longline, pot and trawl gears (within Alaska's 200 nm EEZ), should be awarded continuing certification to the Alaska Responsible Fisheries Management (RFM) Certification Program.

### **1.2. Certification Decision**

The Certification Committee Members agreed to certify the Alaska Pacific Sablefish (Black cod) Commercial Fishery (200nm EEZ) to the Alaska Responsible Fisheries Management (RFM) Standard Version 1.3.

## 2. Fishery Applicant Details

**Table 1.** Fishery Applicant Details.

Applicant Contact Information			
<b>Organization/Company Name:</b>	Eat on the Wild Side (Fishing Vessel Owners' Association (FVOA))	<b>Date:</b>	7/18/2016
<b>Correspondence Address:</b>			
<b>Street:</b>	4005 - 20th Ave. West, Room 232		
<b>City:</b>	Seattle		
<b>State:</b>	Washington	<b>Zip code</b>	98199
<b>Country:</b>	USA		
<b>Phone:</b>	+1 (206) 283-7735	<b>E-mail Address:</b>	robertalverson@msn.com
Key Management Contact Information			
<b>Full Name:</b>	<b>(Last)</b> <i>Alverson</i>	<b>(First)</b> <i>Robert</i>	
<b>Position:</b>	Manager		
<b>Correspondence Address:</b>			
<b>Street:</b>	4005 - 20th Ave. West, Room 232		
<b>City:</b>	Seattle	<b>Zip code</b>	98199
<b>State:</b>	Washington		
<b>Country:</b>	USA		
<b>Phone:</b>	+1 (206) 283-7735	<b>E-mail Address:</b>	robertalverson@msn.com

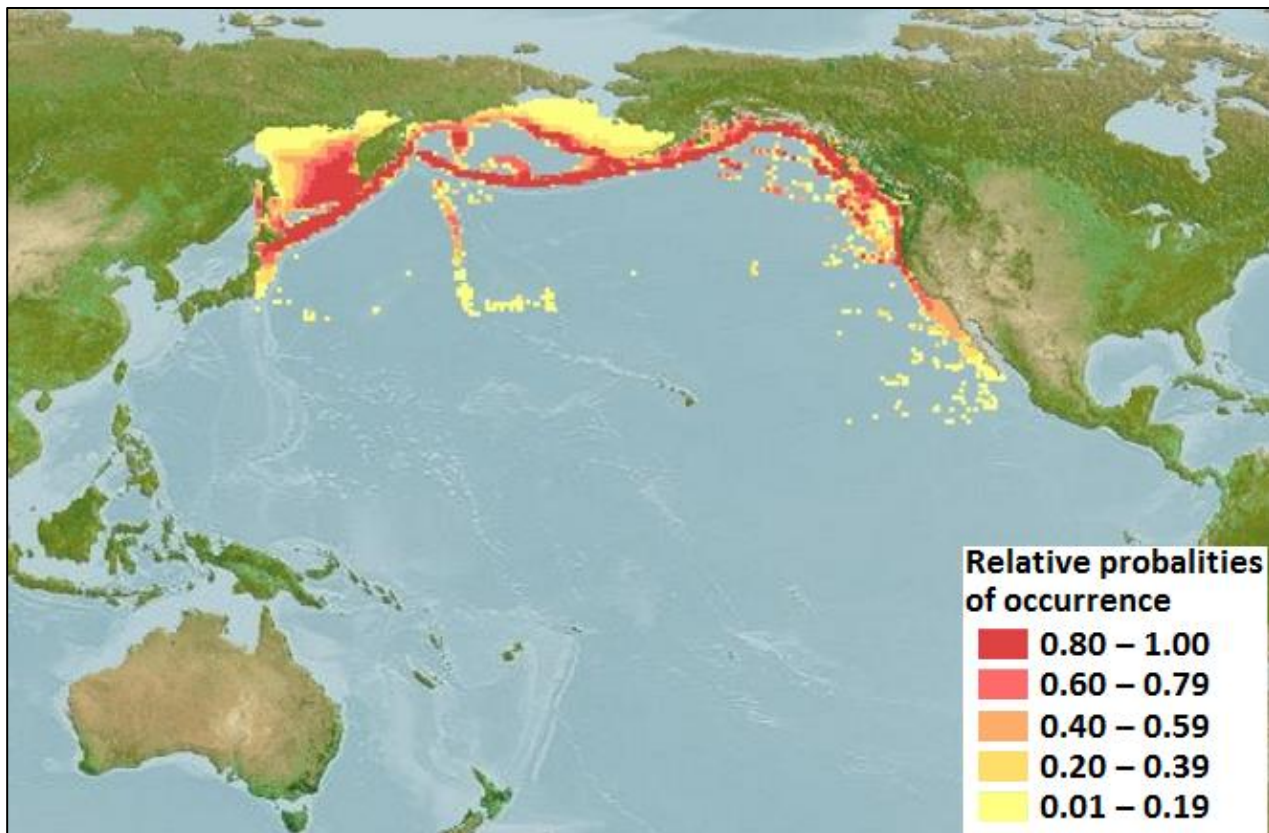
### 3. Background to the Fishery

#### 3.1. Species Biology

Sablefish (*Anoplopoma fimbria*), also known as black cod, are a groundfish species in the family Anoplopomatidae, which has only one other species, the skilfish (*Erilepis zonifer*). Sablefish are elongate in shape and are dark gray to black on their upper body with a lighter gray under side. They have two dorsal fins that are well separated which easily distinguish them from skilfish which have two dorsal fins close together. Sablefish have been recorded to reach sizes of 114 cm in length from nose to tip of the tail and a weight of up to 25 kg. An average sized sablefish from the 2010 Southeast Alaska state fisheries is 69.1 cm from nose to fork length and 3.7 kg.

#### Distribution

Sablefish (*Anoplopoma fimbria*) inhabit the northern Pacific Ocean in an arc extending from northern Mexico in the east to northern Japan in the west, with highest concentrations in Alaska (Figure 1). In Alaskan waters the range of sablefish extends from the Gulf of Alaska, westward to the Aleutian Islands, and into the Bering Sea (Wolotira *et al.* 1993). Adult sablefish occur along the continental slope, shelf gullies, and in deep fjords, generally at depths greater than 200 m. Sablefish observed from a manned submersible were found on or within 1 m of the bottom (Krieger, 1997). In contrast to the adult distribution, juvenile sablefish (less than 40 cm) spend their first two to three years on the continental shelf of the GOA, and occasionally on the shelf of the southeast Bering Sea. The Bering Sea shelf is utilized significantly in some years and little used during other years (Shotwell, 2007).



**Figure 1.** Native distribution map for *Anoplopoma fimbria* (Sablefish), showing the currently known distribution for the species (Source: [www.fishbase.org](http://www.fishbase.org)).

**Stock structure**

Stock assessment scientists have long felt that eastern North Pacific sablefish form two populations based on differences in growth rate, size at maturity, and tagging studies (McDevitt 1990, Saunders et al. 1996, Kimura et al. 1998); a northern population inhabiting Alaska and northern British Columbia (BC) waters and a southern population inhabits southern BC, Washington, Oregon, and California waters, with mixing of the two populations occurring off southwest Vancouver Island and northwest Washington. However, genetic analyses failed to detect genotypic differentiation in support of the two-population hypothesis with only weak differentiation being found between the northern and southern extremes of the Sablefish range (Tsuyuki and Roberts, 1969; Wishard and Aebersold, 1979; Gharrett et al., 1983; Tripp-Valdez et al., 2012). Although Tripp-Valdez et al. (2012) show that two Sablefish populations are more likely than 1, 3, or more, based on the allele frequencies of the markers used in the study, there was not enough statistical power to discriminate fish among populations or the approximate geographic boundaries.

The lack of apparent biological population structure probably arises because sablefish are highly mobile at all spatial scales relevant to their life history. As larvae and juveniles, sablefish are transported by surface currents at scales of 10 – 100 km; as sub-adults, sablefish make ontogenetic movements from shallow to deep waters over 100s of kms; and adult sablefish may make ocean-basin scale movements up to 1000s of kms. Kimura et al (1998) found that in the long-term approx. 3.5% of Alaskan fish migrate to the west coast and 4.4% of west coast fish migrate to Alaska. Therefore, mixing of members from the putative populations is likely sufficient for sablefish to be considered one biological population (DFO, 2013).

However, despite mixing of sablefish being potentially sufficient for them to be considered one biological population, short term migration rates will be small and justify the separation of these populations for fishery management purposes (Kimura et al., 1998). Sablefish are assessed as a single population in Federal waters off Alaska and are managed by discrete regions to distribute exploitation throughout their wide geographical range. Management and regulatory decisions, such as catch limits, seasons, and restrictions, are implemented at the regulatory area level.

Compared to the eastern part of the range the population structure of sablefish in Asian waters is poorly studied. It is believed that western North Pacific sablefish are recruited from the north-eastern Pacific stock (Orlova et al. 2014; Kodolov 1986); however, other authors suggest that replenishment of sablefish off the eastern Kamchatka and the Kuril Islands is not due solely to migration of the adult fish from the Bering Sea along the continental slope, but also due to the drift of yearlings via the Aleutian current (Dudnik et al. 1998) or indeed that Asian waters, including the Okhotsk Sea, are permanently inhabited by sablefish and constitute an integral part of its North Pacific range (Novikov, 1994) with Orlov and Biryukov (2005) suggesting that sablefish spawning may occur in the area.

Currently, there is no directed fishery for sablefish in Russian waters so the resource is probably underutilized<sup>1</sup>. Sablefish are only caught as bycatch in redfish and halibut fisheries. In 2013, the volume of the recommended catch of sablefish in the Russian Pacific waters was 820 t. While landings figures for 2013 are available according to the official statistics catches of sablefish from 2006 to 2011 ranged from 7 t to 27 t.

**Early life history**

Spawning is pelagic at depths of 300 – 500 m near the edges of the continental slope (Mason et al. 1983, McFarlane and Nagata 1988), with eggs developing at depth and larvae developing near the surface as far

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<sup>1</sup> [http://www.vniro.ru/files/trydi\\_vniro/archive/tv\\_2016\\_t\\_160\\_article\\_10.pdf](http://www.vniro.ru/files/trydi_vniro/archive/tv_2016_t_160_article_10.pdf)



offshore as 180 miles (Wing 1997). Average spawning date in Alaska based on otolith analysis is March 30 (Sigler et al. 2001). Along the Canadian coast (Mason et al. 1983) and off Southeast Alaska sablefish spawn from January-April with a peak in February. Farther down the coast off of central California sablefish spawn earlier, from October-February (Hunter et al. 1989). Sablefish in spawning condition were also noted as far west as Kamchatka in November and December (Orlov and Biryukov 2005).

The size of sablefish at 50% maturity off California and Canada is 58-60 cm for females, corresponding to an age of approximately 5 years (Mason et al. 1983, Hunter et al. 1989). In Alaska, most young-of-the-year sablefish are caught in the central and eastern Gulf of Alaska (GOA) (Sigler et al. 2001). Near the end of the first summer, pelagic juveniles less than 20 cm drift inshore and spend the winter and following summer in inshore waters, reaching 30-40 cm by the end of their second summer (Rutecki and Varosi 1997). After their second summer, they begin moving offshore to deeper water, typically reaching their adult habitat, the upper continental slope at 4 to 5 years. This corresponds to the age range when sablefish start becoming reproductively viable (Mason et al. 1983). Younger fish (age 3-4) inhabit shallower waters on the shelf, while older fish migrate down to the slope. Fish also tend to move counter clockwise through the GOA with age (e.g., Maloney and Sigler 2008, Heifetz and Fujioka 1991).

### **Feeding Ecology**

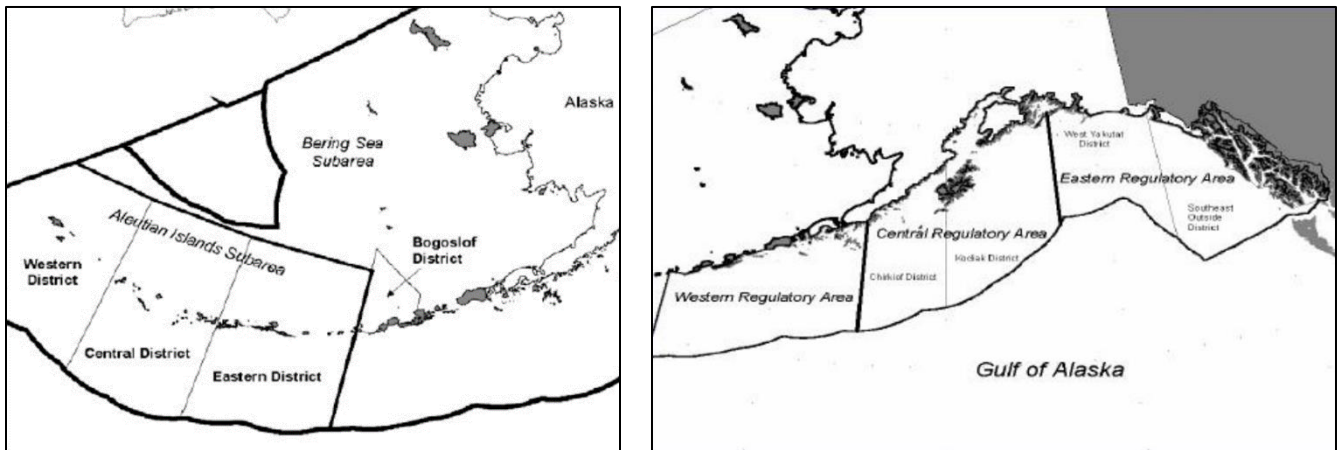
Larval sablefish feed on a variety of small zooplankton ranging from larval copepods (crustaceans) to small amphipods (small, shrimp-like crustaceans). Juveniles feed primarily on macrozooplankton and micronekton. Older juveniles and adults appear to be feed on whatever prey is available, ranging from bottom invertebrates to fishes, squid, and jellyfish. During their second year, sablefish live near shore and feed on salmon fry and smolts during the summer months. Likewise, salmon in southeast Alaska are known to feed on young sablefish during the late summer. A major predator for adult sablefish is most likely sperm whales.

### **Migration**

Federally managed sablefish found in the Bering Sea and in the GOA are considered one population with migration occurring between these regions. In the GOA, small sablefish move westward and large sablefish move eastward. Consequently, large year classes are first noticed in the westward areas. In Southeast Alaska, the Chatham and Clarence Strait fisheries are considered separate populations; however, tagging studies indicate some movement between Chatham Strait and outside waters and between Clarence Strait and British Columbian waters. The degree of migration between inside and outside waters has not been quantified.

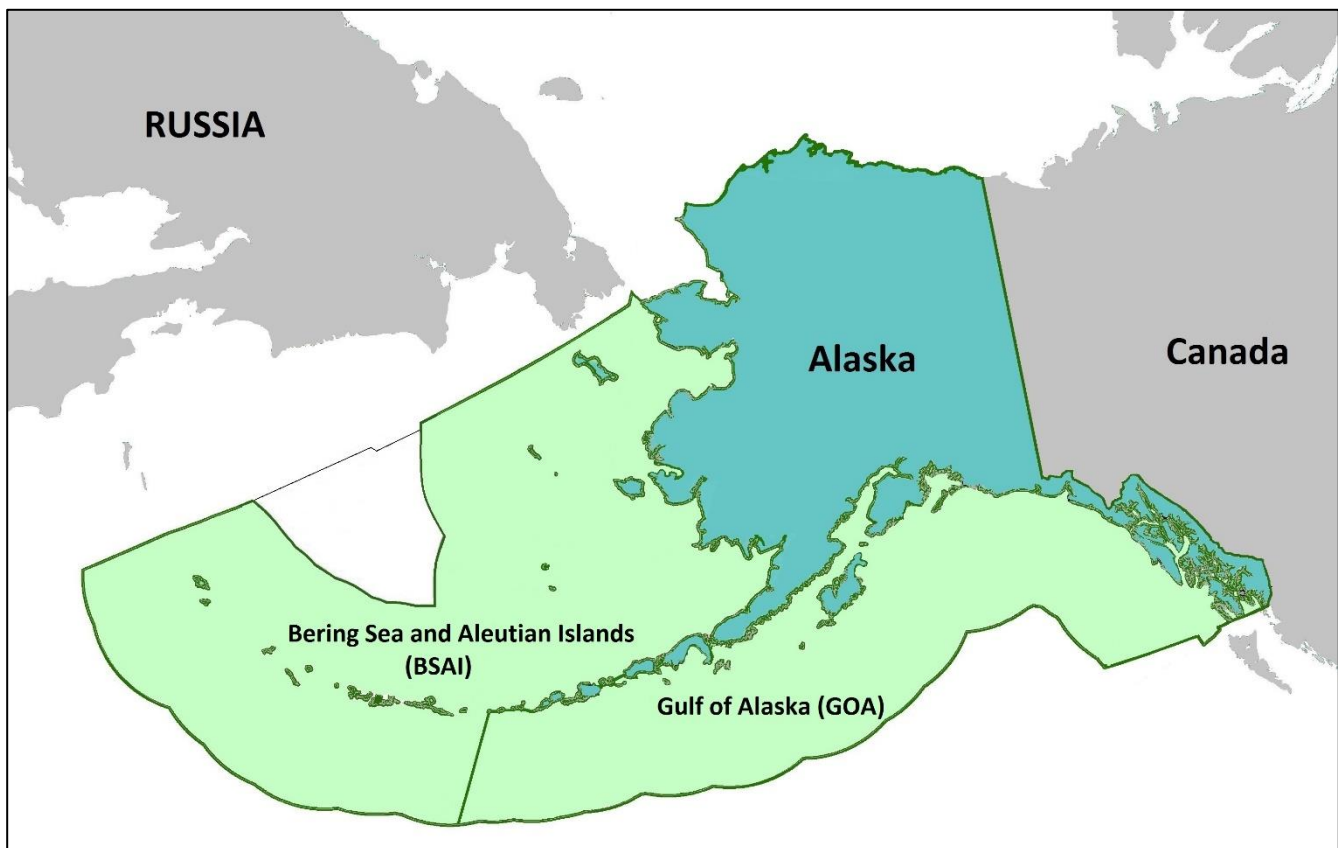
## **3.2. Fishery Location**

As previously discussed, sablefish are assessed as a single population in Federal waters off Alaska due to their being highly migratory for at least part of their life (Heifetz and Fujioka 1991, Maloney and Heifetz, 1997; Kimura et al., 1998; DFO, 2013). Sablefish are managed by discrete regions to distribute exploitation throughout their wide geographical range. Management and regulatory decisions, such as catch limits, seasons, and restrictions, are implemented at the regulatory area level. There are 4 management areas in the GOA: Western, Central, West Yakutat, and East Yakutat/Southeast Outside (SEO) (Figure 2 left); and 2 management areas in the Bering Sea and Aleutian Islands (BSAI): the eastern Bering Sea (EBS) and the Aleutian Islands (AI) region (Figure 2 right).



**Figure 2.** Regulatory areas in the Bering Sea and Aleutian Islands (BSAI) (left) and the Gulf of Alaska (GOA) (right).

Note only those areas within the boundaries of the Alaskan EEZ in the North Pacific (i.e. those outlined in green in Figure 3) are covered in detail in this assessment and only catches from these areas are ultimately eligible for Certification.



**Figure 3.** Management Areas within the boundaries of the Alaskan EEZ in the North Pacific that are covered in detail in this assessment and from which catches eligible for Certification may come.

### 3.3. Fishing Method

The majority of the sablefish catch in Alaska comes from the eastern and central GOA, but the fishery also operates in the western GOA, Bering Sea, and Aleutian Islands. Fixed gear (longlines and pots) harvests approximately 90% of the sablefish quota and trawl gear approximately 10%. Pot fishing, which is banned in the GOA, is allowed in the BSAI and accounts for nearly half of the Individual Fishing Quota (IFQ) catch in those areas<sup>2</sup>.

Sablefish are caught primarily with longline gear in Alaska; however, the Clarence Strait area has both a season for pot and longline gear. The Aleutian Islands state fishery allows longline, pot, jig, and hand troll gear, and one trawl vessel qualifies for the limited entry program in Prince William Sound. In federal waters, sablefish are primarily caught in directed fisheries on longline gear; however, an increasing trend toward pot gear exists due to whale depredation of sablefish on longline gear. In addition, sablefish are caught as bycatch in trawl fisheries<sup>3</sup>.

#### Longline

Longliners, as vessels that fish with longlines are known, use a long line (“groundline”) that is laid on the seabed to catch demersal species of fish (bottomfish), including halibut, sablefish and lingcod (Figure 4). Attached to the groundline are leaders or gangions with baited hooks. Since the inception of the IFQ system, average set length in the directed fishery for sablefish has been near 9 km and average hook spacing near 1.2 m. The gear is baited by hand or by machine, with smaller boats generally baiting by hand and larger boats generally baiting by machine. Circle hooks are usually used, except for modified J-hooks on some boats with machine baiters. The lines are anchored at each end of each set (skate). Lines at both ends of the set run to the surface and are marked with a buoy and flag. A longline vessel typically sets several lines for a 24-hour soak. The lines are retrieved over a side or stern roller with a power winch and the fish caught are bled and or dressed and then packed in ice in the vessel’s holds. Longliners are typically large vessels, 50 to 100 feet long, with a weather cover on the stern to protect the crew. The sablefish fishery has historically been a small boat fishery with the median vessel length in the 2011 fishery being 56ft. Longlines are coiled and stacked on deck or on the winch, when not in use. Longliners are readily identified by their weather cover and, when not fishing, by the numerous orange buoys and flags that are tied along their rails.

#### Pots

Pot fishing in the IFQ fishery is currently not allowed in the GOA but is legal in the BSAI regions. In 2005 the NPFMC has approved the use of pot gear in the GOA IFQ sablefish fishery. However, this action still faces a lengthy regulatory process and is not likely to go into effect until 2017, the proposed rule is available on the Federal Register website<sup>4</sup>. To minimize gear conflict and prevent overconsolidation of sablefish quota into pot vessels, the NPFMC established pot limits. In the Western and Central Gulf of Alaska, vessels will be limited to 300 pots. In West Yakutat and Southeast Outside, vessels are limited to 120 pots per vessel.

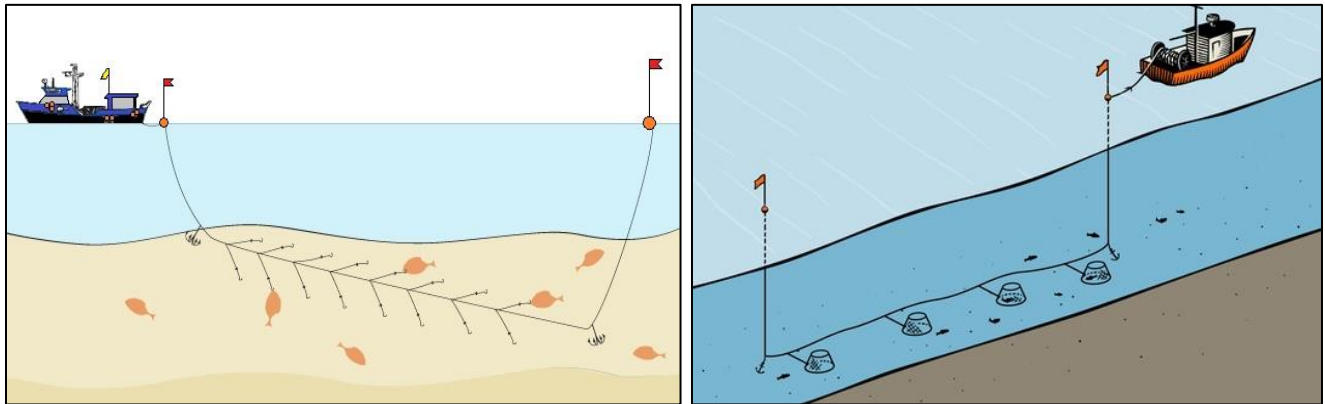
In 2000, the pot fishery accounted for less than ten percent of the fixed gear sablefish catch in these areas but effort has increased substantially in response to killer whale depredation. Pots are longlined with approximately 40 - 135 pots per set. Since 2004, pot gear has accounted for over 50% of the BS fixed gear IFQ catch and up to 34% of the fixed gear catch in the AI. Sablefish pots are large steel-framed cages covered in net mesh. The baited pots are placed on the seafloor where they trap the fish. Fish enter the traps through tunnels but cannot escape. Later the pots are retrieved and the fish are sorted on deck. Non-target catch is returned to the sea.

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<sup>2</sup> [http://www.afsc.noaa.gov/ABL/MESA/mesa\\_sa\\_sable\\_fi.htm](http://www.afsc.noaa.gov/ABL/MESA/mesa_sa_sable_fi.htm)

<sup>3</sup> <http://www.adfg.alaska.gov/index.cfm?adfg=sablefish.management>

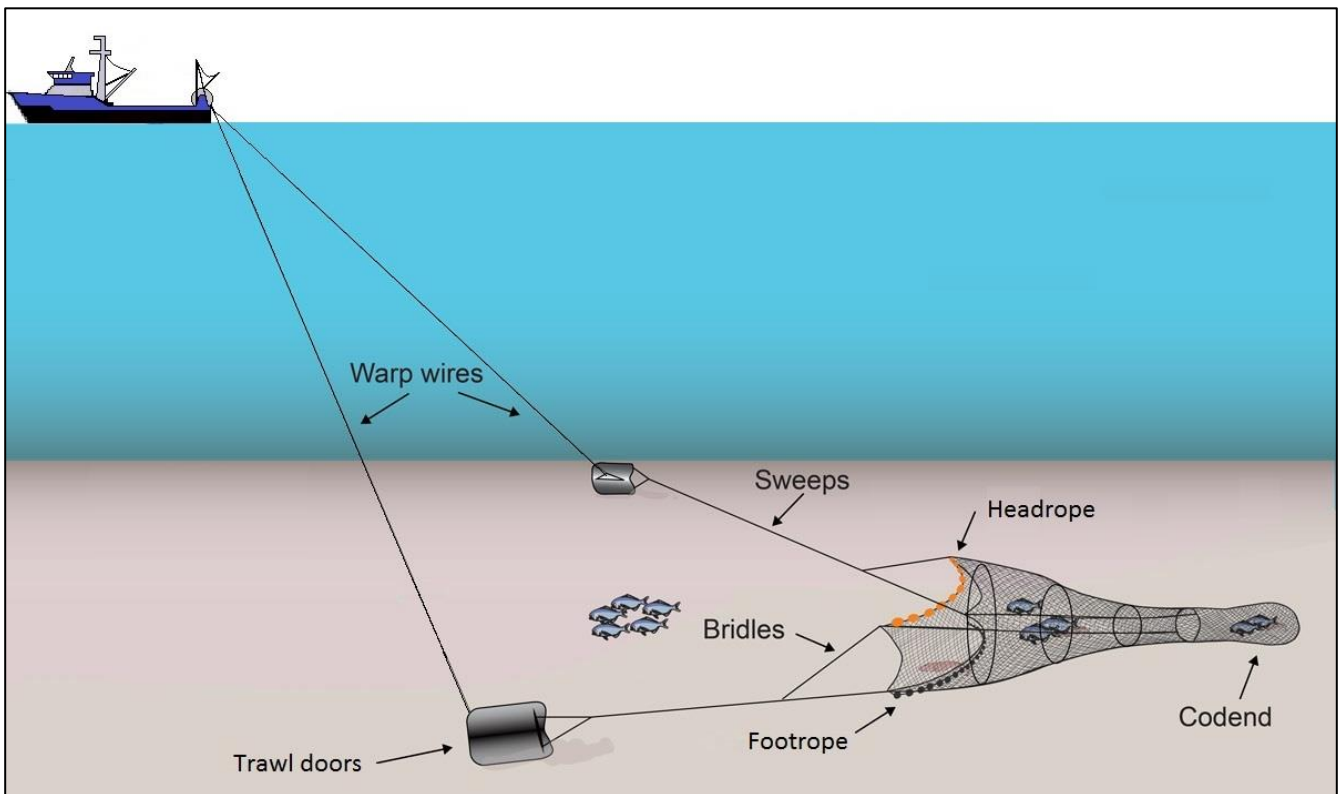
<sup>4</sup> <https://www.federalregister.gov/documents/2016/08/19/2016-19795/fisheries-of-the-exclusive-economic-zone-off-alaska-allow-the-use-of-longline-pot-gear-in-the-gulf>



**Figure 4.** Schematics of a benthic longline (left) and sablefish pots (right) as employed in the Alaskan sablefish commercial fishery.

**Trawls**

Sablefish are caught and legally landed as bycatch during directed trawl fisheries for other species groups such as rockfish and deepwater flatfish under Maximum Retainable Allowances specifications. A trawl is a large, bag-shaped net that is towed by a fishing vessel (Figure 5). Trawlers are generally large boats ranging from 70 feet to over 200 feet in length. The doors, because of the way they are built and rigged to the trawl, keep the mouth of the trawl open as it moves through the water. The headrope is equipped with floats forming the upper opening. The footrope is rigged with weights forming the lower opening. Trawlers use sophisticated ultrasonic devices both for location of fish underwater and for species identification.



**Figure 5.** Schematic of a bottom trawl as employed in the Alaskan sablefish commercial fishery.

### 3.4. Fishery Management History and Organization

Sablefish have been exploited since the late-1800s by U.S. and Canadian fishermen, with the sablefish fishery developing primarily as a secondary activity of the U.S. and Canadian halibut fishery. Sablefish were initially fished off Washington and British Columbia with the geographic extent of the fishery later expanding to Oregon, California, and Alaska during the 1920's. Until 1957, the sablefish fishery was exclusively prosecuted by U.S. and Canadian vessels resulting in relatively small catches averaging 1,666 t from 1930 to 1957 (Low et al. 1976).

In 1958 Japanese longliners began fishing operations in the eastern BS and the fishery expanded rapidly in this area with catches peaking at 25,989 t in 1962. In response to expanding trawl fisheries in the eastern BS, the longline fleet shifted its efforts to the AI and the GOA regions. Sablefish catches in the GOA increased rapidly, peaking at 36,776t in 1972, while AI catches remaining at relatively low levels. Prior to 1968 the eastern BS accounted for the majority of sablefish catches, with the majority from 1968 to 1977 coming from the GOA.

Heavy fishing during the 1970's led to a substantial population declines and the introduction of fishery regulations, including the passage of the Fishery Conservation and Management Act (FCMA), latterly known as the Magnusson-Stevens Act (MSA). These regulations led to sharp reductions in catches, with catches in the late 1970's restricted to approx. one-fifth of 1972's peak catch (36,776t). In this period sablefish was mostly caught as bycatch in trawl fisheries targeting other species, with landings being reported by other foreign nations besides Japan including the Soviet, Korea, Poland, Taiwan, Mexico, Bulgaria, Federal Republic of Germany, and Portugal.

The U.S. longline fishery in the GOA began expanding in 1982 and by 1988 the fishery was exclusively domestic. In parallel with the domestication of the fishery the fishing season began to shorten, from year-round in 1983 to just 10 days in 1994. At this point the sablefish fishery clearly warranted its label as a "derby" fishery.

In response, 1995 saw the introduction of the Individual Fishery Quota (IFQ) Program for hook-and-line vessels alongside an 8-month fishing season. The IFQ Program issued quota shares for both sablefish and halibut to individuals based on historical landings. Since rationalization, the number of vessels reporting IFQ harvests of sablefish has declined from 616 in 1995 to 362 in 2011 (NOAA 2012). This decrease occurred as shareholders began to consolidate their IFQ holdings and fish them off fewer vessels in an effort to reduce costs and boost profitability (Fina 2011). In recent years, approximately 30% of vessels eligible to fish in the IFQ fishery participate in both the halibut and sablefish fisheries and approximately 40% of vessels fish in more than one management area.

Sablefish also are caught incidentally during directed trawl fisheries for other species groups such as rockfish and deepwater flatfish. Allocation of the TAC by gear group varies by management region and influences the amount of catch in each region. Five State of Alaska fisheries land sablefish outside the IFQ program; the major State fisheries occur in the Prince William Sound, Chatham Strait, and Clarence Strait and the minor fisheries in the northern GOA and AI. These minor state fisheries were established by the State of Alaska in 1995 at the same time as the Federal IFQ Program to provide open-access fisheries to fishermen who did not qualify for the IFQ fishery.

IFQ management has increased fishery catch rates and decreased the harvest of immature fish (Sigler and Lunsford 2001). Catching efficiency (the average catch rate per hook for sablefish) increased 1.8 times with the change from an open-access to an IFQ fishery. The change to IFQ also decreased harvest and discard of immature

fish which improved the chance that these fish will reproduce at least once. Thus, the stock can provide a greater yield under IFQ at the same target fishing rate because of the selection of older fish (Sigler and Lunsford 2001).

### **The North Pacific Fishery Management Council (NPFMC)**

The NPFMC is one of eight regional councils established by the Magnuson Fishery Conservation and Management Act in 1976 (which has been renamed the Magnuson-Stevens Fishery Conservation and Management Act) to oversee management of the nation's fisheries. NPFMC recommends regulations to govern the directed sablefish fisheries in waters off Alaska and makes allocation decisions among users and user groups fishing off Alaska.

In 1995, NPFMC and NOAA Fisheries Service Alaska Regional Office implemented an individual fishing quota (IFQ) system for the Alaska halibut and sablefish industry, similar to Canada's program implemented in 1991. As a result, the commercial fishing season was extended from only days to 8 months or more. This ended the derby fishery with its incredible loss in gear, sablefish resource (through wastage and spoilage), economic returns and human life. The new IFQ system increased the value of the fishery while reducing wastage.

### **The National Marine Fishery Service (NMFS)**

The National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NMFS) is responsible for the management, conservation, and protection of living marine resources within the US EEZ. The Alaska Region of NOAA Fisheries oversees fisheries that produce about half the fish caught in US waters, with responsibilities covering 842,000 square nautical miles off Alaska.

For the Alaska sablefish fishery, NMFS works closely with the NPFMC and ADFG, performing scientific research (groundfish trawl surveys, conservation of wildlife such as marine mammals and habitat conservation) and being responsible for developing, implementing, and enforcing regulations pertaining to management of sablefish fisheries in US waters.

### **Alaska Department of Fish and Game (ADFG)**

ADFG manages sablefish fisheries in state waters and participates in Federal fisheries management through the ADFG Commissioner's seat on the NPFMC. In most cases ADFG issues emergency orders governing state sablefish fisheries that duplicate NMFS management actions, thus establishing what are termed "parallel fisheries". Where there is a parallel fishery for a species, the state waters fishery usually opens after the federal fishery closes. In certain state waters, Alaska sablefish fisheries are managed by ADFG and the BOF outside the sablefish IFQ program. State managed fisheries for sablefish occur in Southeast Alaska, Prince William Sound, Cook Inlet, and the Aleutian Islands. The Cook Inlet and the Aleutian Islands state fisheries are minor fisheries and are open access fisheries managed in accordance with a Guideline Harvest Level (GHL) while the Prince William Sound, Chatham and Clarence Strait represent major limited entry fisheries. ADFG also licenses anglers and sport fishing businesses and guides, monitors and reports on sport and subsistence harvests, and assists federal agencies with preparation of regulatory analyses.

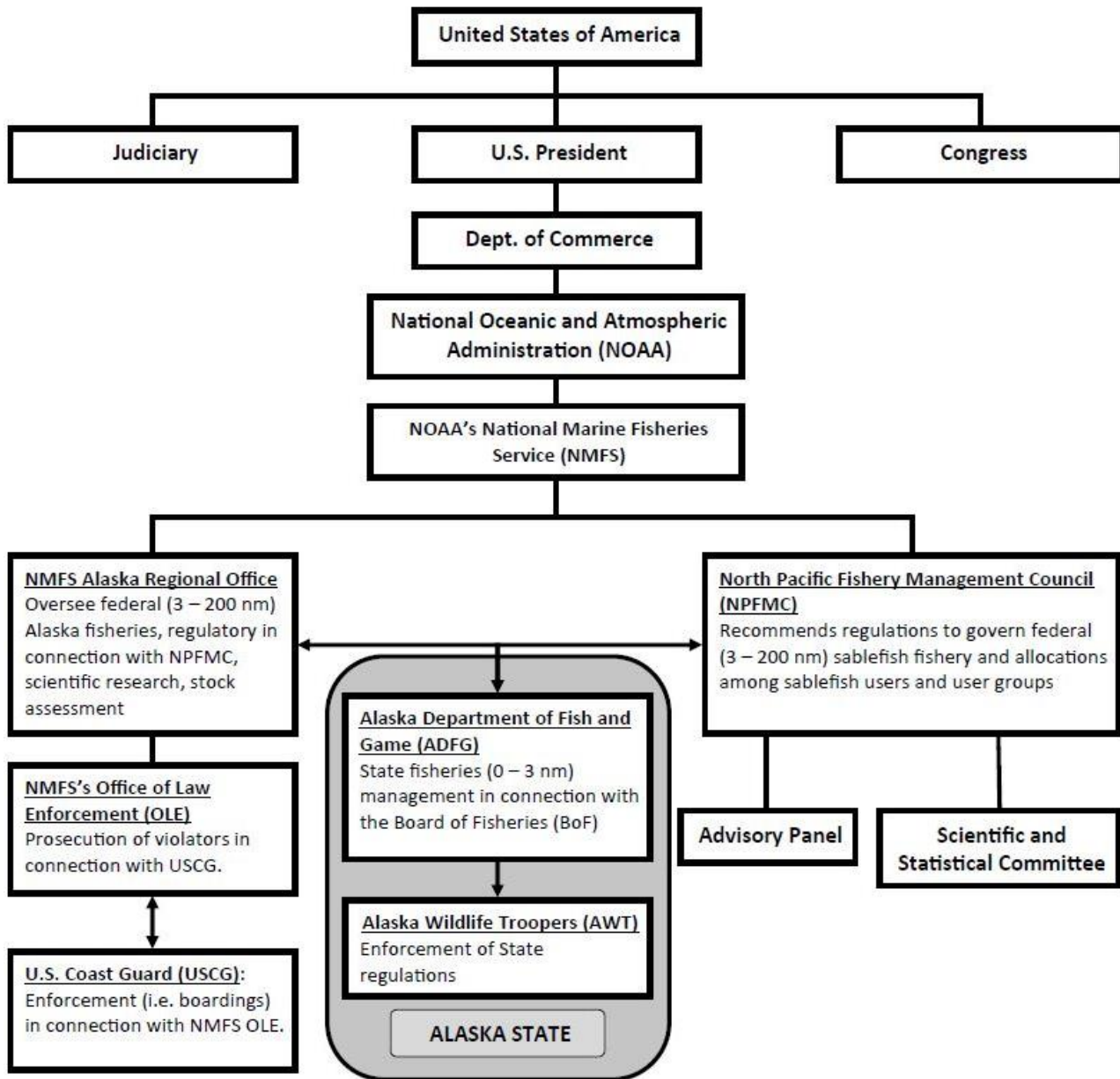


Figure 6. Fishery Management Organizational Chart for Alaskan sablefish fisheries.

### 3.5. Stock Assessment Activities

Sablefish have been exploited since the end of the 19th century by U.S. and Canadian fishermen, and are thought to form two populations based on differences in biology and movement. The northern population inhabits Alaska and waters of northern British Columbia and the southern population inhabits southern British Columbia, Washington, Oregon, and California waters, with mixing of the two populations occurring off southwest Vancouver Island and northwest Washington (Hanselman et al. 2015a). Significant stock structure among the Alaskan population is unlikely given extremely high movement rates throughout their lives (Hanselman et al. 2015b).

Sablefish in Federal waters off Alaska are assessed as a single population because of their high movement rates, but are managed by discrete regions to distribute exploitation throughout their wide geographical range. There are four management areas in the GOA and 2 in the BSAI. In state waters, five sablefish fisheries are managed by the ADF&G. The three major state sablefish fisheries in Prince William Sound, Chatham Strait, and Clarence Strait have stock assessments based on surveys, tagging results, and population models. Two minor state fisheries in Cook Inlet and the Aleutian Islands are managed using a Guideline Harvest Level (GHL), which is determined based on harvest history, fishery performance, and the Federal survey results for the area.

A number of fishery independent surveys catch sablefish in Alaskan waters. The surveys included in the federal assessment model are the longline survey and the GOA bottom trawl survey conducted by the NOAA Alaska Fisheries Science Center (AFSC) (Hanselman et al. 2015a). Results from other surveys that occur in the same areas are analyzed and presented in the annual SAFE, but are not included as separate indices in the model. These include data used in other stock assessments, such as the IPHC halibut longline survey, ADF&G surveys and tagging in state waters, and a trap survey for sablefish conducted by DFO in British Columbia waters.

The sablefish population is assessed with an age-structured model, which incorporates data from commercial fisheries and surveys. The analysis presented by Hanselman et al. (2015a) extends earlier age structured models developed by Kimura (1990) and Sigler et al. (1999). This current model configuration follows a more complex version of an earlier model used for GOA Pacific ocean perch in that it includes split sexes and many more data sources to attempt to more realistically represent the underlying population dynamics of sablefish. The current configuration of the model is essentially unchanged in recent years, having been accepted by NPFMC in 2010. The analysis was completed using AD Model Builder software.

Scientists from NMFS/AFSC, ADF&G, other agencies, and universities prepare a Stock Assessment and Fishery Evaluation (SAFE) report annually, which contains three volumes, one of which contains the stock assessments. Chapters of the assessment volume deal with each stock assessment (e.g. for sablefish, see Hanselman et al. 2015a). The SAFE report is scientifically based, considers all available research on sablefish, and provides information to NPFMC for determining annual harvest specifications, documenting significant trends or changes in the stocks, marine ecosystem, and fisheries. This document is reviewed first by the NPFMC Groundfish Plan Team, then by the Scientific and Statistical Committee (SSC) and Advisory Panel, and finally by the full NPFMC Council. Upon review and acceptance by the SSC, the SAFE report and any associated SSC comments constitute the best scientific information available. NPFMC actively encourages stakeholder participation, and all Council deliberations are conducted in open, public sessions. In addition to the NPFMC/NMFS process, a review of the sablefish stock assessment is currently underway (May 2016) by the Center for Independent Experts (CIE)<sup>5</sup>, which supplies external reviewers for NMFS assessment reviews.

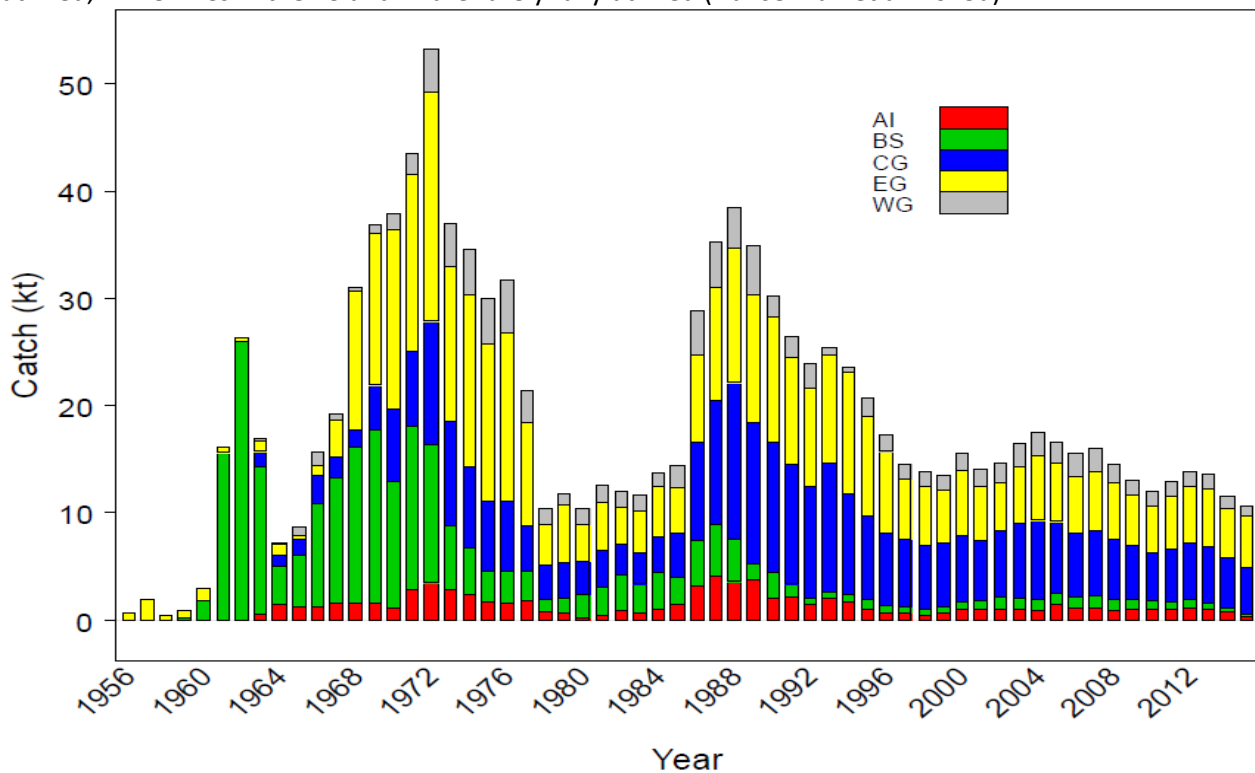
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<sup>5</sup> <http://ciereviews.org/>



### 3.6. Historic Biomass and Removals in the Fishery

As described in the current SAFE assessment report by Hanselman et al.(2015a), sablefish removals in Alaska averaged about 1,700 t from 1930 to 1957 and exploitation rates remained low. When Japanese vessels began fishing for sablefish in the Bering Sea and GOA in the late 1950's and early 1960's, 1963, catches rapidly escalated, reaching a peak of 53,080 t in 1972. Passage of the MSA led to significant fishery restrictions from 1978 to 1985, and total catches were reduced substantially. Exceptional recruitment led to increased sablefish abundance and higher catches during the late 1980's, which coincided with the fishery expansion by USA vessels. Catches declined during the 1990's, increased in the early 2000s, and have since declined to around 12,000 t (Figure 6), which is similar to the level throughout much of the late 1970's and early 1980's. TACs in the GOA are nearly fully utilized, while TACs in the BS and AI are rarely fully utilized (Hanselman et al. 2015a).

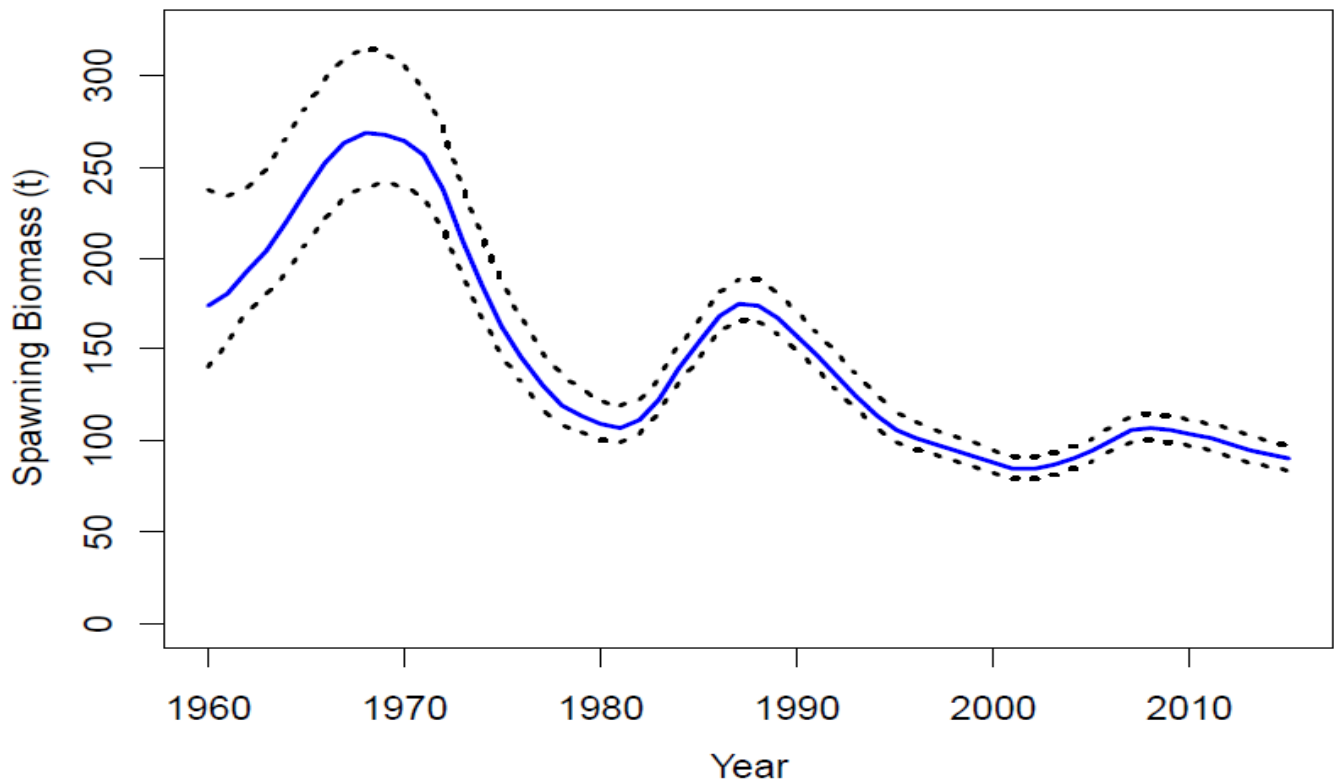


**Figure.7. Sablefish catch by NPFMC management area. CG, EG, WG are Central, Eastern, and Western Gulf of Alaska. (From Fig. 3.2 of Hanselman et al. 2015).**

Sablefish abundance and biomass increased during the mid-1960's (Fig. 7) due to strong year classes in the early 1960's. Abundance subsequently dropped during the 1970's due to heavy fishing and relatively low recruitment. The population recovered in the 1980's due to a series of strong year classes from the late 1970's but also recovered at different rates indifferent areas (see Table 3.15 of Hanselman et al. 2015a). Spawning biomass peaked again in 1987, but then decreased because these strong year classes had passed through the population. The current population model suggests a generally increasing trend in spawning biomass since the all-time low in 2002. The projected 2016 spawning biomass is 34% of unfished spawning biomass. Spawning biomass has increased from a low of 33% of unfished biomass in 2002 to 42% in 2008 and has now declined to 34% of unfished biomass projected for 2016 (Hanselman et al. 2015a). Model projections indicate that this stock is not subject to overfishing, is not overfished, and is not approaching an overfished condition.

The last two above-average year classes, 2000 and 2008, classes each comprise 15% of the projected 2016 spawning biomass. The 2008 year class will be about 75% mature in 2016. There are a number of reports of

young (age 0 and 1) sablefish being caught in the GOA in fisheries and surveys in 2014 and 2015, but these fish are too young to yet be estimated in the current population modelling, which uses age 2 as the first age.



**Figure 8. Estimated sablefish spawning biomass (thousands t) with 95% credible intervals. (From Fig. 3.13 Hanselman et al. 2015a)**

### 3.7. Economic Value of the Fishery

The sablefish resource in Alaska contributes to the economy mainly through the commercial fisheries, as there is relatively minimal sport/recreational fishing for this species. Fissel et al. (2015) show a number of tables with economic data in the Alaskan commercial fishery for sablefish, including the data in the table below.

**Table 2.** Ex-vessel value of the groundfish catch in Alaska by area, vessel category, gear, and species, 2010 - 2014; based on reported fish tickets (\$ millions). Taken from Table 19 B of Fissel et al. 2015.

Year	Gulf of Alaska			Bering Sea & Aleutian Islands			All Alaska		
	Catcher Vessel	Catcher Processor	All Sectors	Catcher Vessel	Catcher Processor	All Sectors	Catcher Vessel	Catcher Processor	All Sectors
2010	75.7	7.9	83.5	5.2	5.0	10.2	80.9	12.9	93.8
2011	110.1	11.8	122.0	12.7	4.9	17.6	122.8	16.8	139.5
Sablefish 2012	97.4	8.9	106.3	6.1	4.6	10.7	103.5	13.5	117.0
2013	66.8	6.2	73.0	3.5	3.4	7.0	70.3	9.7	80.0
2014	71.8	6.8	78.5	4.0	1.7	5.7	75.7	8.5	84.2

These data indicate that the ex-vessel value of the Alaskan commercial sablefish catch, from Federal and State waters combined, was just over \$84 million in 2014, similar to the 2013 value, and lower than the three previous

years. A high percentage of the catch value is from GOA Region. It is important to note that the reported ex-vessel price per pound fluctuated considerably over these 5 years, from \$2.73 in 2013 to \$4.84 in 2011 (Fissel et al. 2015). Most of the sablefish landings come from catcher vessels in the Gulf of Alaska area, and only about 2.3% of the catch in 2013 and 2014 was taken by vessels less than 40 feet in overall length (D. Hanselman, pers. comm.).

Sablefish is not a major sport/recreational fishery target in Alaska, although recreational catches have been increasing in state waters in recent years (Hanselman et al. 2015a). Jaenicke (2014) notes that the sablefish sport harvest is relatively small compared to other species sport harvested in the state waters of the Southeast Alaska region. A study by Lew et al. in 2015, based on surveys conducted of the saltwater sport fishing charter operators in Alaska, estimated that annual revenues in this sector ranged from \$125 million to \$172 million in 2011-2013. Halibut and salmon are primary targets, and sablefish is not mentioned in the study, thus it is unlikely to have a large economic value as a recreational fishery.

#### 4. Proposed Units of Assessment

The following are the proposed units of assessment and certification for the U.S. Alaska Sablefish Fishery.

**Table 3.** Proposed units of assessment and certification for the U.S. Alaska Sablefish Fishery.

Unit of Certification			
U.S. ALASKA PACIFIC SABLEFISH COMMERCIAL FISHERIES			
Fish Species (Common & Scientific Name)	Geographical Location of Fishery	Gear Type	Principal Management Authority
Sablefish (black-cod) <i>Anoplopoma fimbria</i>	Gulf of Alaska (GOA)  and  Bering Sea & Aleutian Islands (BSAI)	Benthic longline Pot Bottom Trawl	National Marine Fisheries Service (NMFS)  North Pacific Fishery Management Council (NPFMC)  Alaska Department of Fish and Game (ADFG)

## 5. Consultation Meetings

### 5.1. On-Site Assessment and Consultation Meetings

**Table 4.** On-Site Assessment and Consultation Meetings.

Meeting Date and Location	Personnel	Areas of discussion
<p><b>Date:</b> May 16<sup>th</sup> 2016</p> <p><b>Location:</b> NPFMC Anchorage Time: 9:30 AM</p>	<p>NPFMC Chris Oliver James Armstong Diane Evans</p> <p><b>Assessment Team Members:</b> Ivan Mateo, Lead Assessor Bill Brodie, Assessor Sam Dignan, Assessor</p>	<p><b>Topics Discussed:</b></p> <ul style="list-style-type: none"> <li>▪ Changes to key management measures for 2015-16,</li> <li>▪ Changes to vessel or fleet allocations, apportionments, or in the way either of the fisheries operated in 2015</li> <li>▪ Changes in 2015-16 to technical measures such as closed areas or seasons, or to fishing gears, that would impact either sablefish or halibut</li> <li>▪ Concerns, for either resource, with current or projected stock status from the most recent assessments</li> <li>▪ Concerns with coverage levels, or other key aspects of the observer program,</li> <li>▪ Comments on the review of the 2015 Observer Annual Report</li> <li>▪ Update on electronic/video monitoring.</li> <li>▪ Feedback from enforcement or industry on implementation of the use of pot longline gear in the Gulf of Alaska Sablefish IFQ fishery</li> <li>▪ Update on Essential Fish Habitat review in 2015-16, how will this impact management in 2016-17</li> <li>▪ Analysis on compliance in the groundfish fishery</li> <li>▪</li> </ul>
<p><b>Date:</b> May 17<sup>th</sup> 2016</p> <p><b>Location:</b> Fisheries Terminal Seattle Time: 1:30 PM</p>	<p>Client meeting FVOA Robert Alverson</p> <p><b>Assessment Team Members:</b> Ivan Mateo, Lead Assessor Bill Brodie, Assessor Sam Dignan, Assessor</p>	<p><b>Topics Discussed:</b></p> <ul style="list-style-type: none"> <li>▪ Status of the stocks in reassessment and past client activities</li> </ul>
<p>May 18 2016 NOAA Ted Stevens Marine Research Institute Lena Loop Juneau AK 2:30 PM</p>	<p>NOAA – Mesa Dana Hanselman, Chris Lunsford, Jon Heifetz, Cara Rodgeveiller</p> <p>Assessment Team Members: Ivan Mateo, Lead Assessor Bill Brodie, Assessor</p>	<p><b>Topics Discussed</b></p> <ul style="list-style-type: none"> <li>▪ Stock Status Sablefish</li> <li>▪ Surveys and stock assessment methodologies</li> </ul>

Meeting Date and Location	Personnel	Areas of discussion
	Sam Dignan, Assessor	
<b>Date:</b> May 19 <sup>th</sup> 2016  <b>Location:</b> USGSC Juneau Time:9:30 PM	US Coastguard Courtney Seargent Alanna McGovern  <b>Assessment Team Members:</b> Ivan Mateo, Lead Assessor Bill Brodie, Assessor Sam Dignan, Assessor	<b>Topics Discussed:</b> <ul style="list-style-type: none"> <li>▪ Enforcement legislation, rules or proposals. Significant changes and updates over calendar year 2015.</li> <li>▪ Enforcement of management measures that support reduction of bycatch and discards, reduction of impacts on habitat, 2015 updates.</li> <li>▪ Number of boardings, number of violations detected, types of violations for the species in question. General level of compliance overall. Updates for 2015.</li> <li>▪ Gear loss concerns Updates for 2015 mostly related to longline gear, crab pots.</li> <li>▪ Relationships and interaction with AWT, updates for 2015. Significant prosecution from NMFS OLE in 2015.</li> <li>▪ Dixon Entrance: foreign fleet fishing activities Russian federation line, foreign vessel encroachment</li> <li>▪ Donut Hole: any fishing activity detected in 2015</li> </ul>
<b>Date:</b> May 19 <sup>th</sup> 2016  <b>Location:</b> NOAA AK Regional Office Juneau Time: 1:30 PM	NOAA AK Regional Office Mary Furuness  <b>Assessment Team Members:</b> Ivan Mateo, Lead Assessor Bill Brodie, Assessor Sam Dignan, Assessor	<b>Topics Discussed:</b> <ul style="list-style-type: none"> <li>▪ Changes to key management measures for 2015-16,</li> <li>▪ Changes to vessel or fleet allocations, apportionments, or in the way either of the fisheries operated in 2015</li> <li>▪ Changes in 2015-16 to technical measures such as closed areas or seasons, or to fishing gears, that would impact either sablefish or halibut</li> <li>▪ Concerns with coverage levels, or other key aspects of the observer program,</li> <li>▪ Comments on the review of the 2015 Observer Annual Report</li> <li>▪ Update on electronic/video monitoring.</li> <li>▪ Feedback from enforcement or industry on implementation of the use of pot longline gear in the Gulf of Alaska Sablefish IFQ fishery</li> <li>▪ Update on Essential Fish Habitat review in 2015-16, how will this impact management in 2016-17</li> <li>▪ Analysis on compliance in the groundfish fishery</li> <li>▪</li> </ul>
<b>Date:</b> May 20 <sup>th</sup> 2016  <b>Location:</b> ADFG Juneau Time: 9:30 AM	ADFG Juneau Forrest Bowers  <b>Assessment Team Members:</b> Ivan Mateo, Lead Assessor Bill Brodie, Assessor Sam Dignan, Assessor	<b>Topics Discussed:</b> <ul style="list-style-type: none"> <li>▪ Discussion of reduction in frequency of the tagging program</li> <li>▪ Discussion of results for sablefish from the ADF&amp;G longline survey in 2015</li> <li>▪ Changes to sablefish quotas or observed abundance in other state-managed areas</li> </ul>

Meeting Date and Location	Personnel	Areas of discussion
		<ul style="list-style-type: none"> <li>▪ Discussion of Low recruitment of sable fish in Northern Southeast Inside (NSEI)</li> <li>▪ Updates on the acoustic telemetry research on juvenile sablefish in State waters</li> <li>▪ Other scientific research/studies being conducted by ADF&amp;G relevant to sablefish or halibut in State waters</li> <li>▪ Changes in management measures for the state-managed fisheries for sablefish in Prince William Sound, NSEI, and SSEI areas</li> <li>▪ Discussion observer coverage in the State-managed sablefish fisheries</li> <li>▪ Discussion of trap limit per license</li> <li>▪ Bait used and amount</li> <li>▪ Discussion of operational guidelines or standards (i.e. best practices, code of conduct) on how harvesters can avoid unsustainable fishing practices</li> <li>▪ Discussion of regulations in place to reduce the risk of entanglement of marine mammals</li> <li>▪ Fishing practices to reduce the impact of traps on benthic habitats</li> </ul>
<p><b>Date:</b> June 24<sup>th</sup> 2016</p> <p><b>Location:</b> Conference call</p>	<p>NOAA OLE AK Office Juneau Will Ellis</p> <p><b>Assessment Team Members:</b> Ivan Mateo, Lead Assessor</p>	<p><b>Topics Discussed:</b></p> <ul style="list-style-type: none"> <li>▪ Enforcement legislation, rules or proposals. Significant changes and updates over calendar year 2015.</li> <li>▪ Enforcement of management measures that support reduction of bycatch and discards, reduction of impacts on habitat, 2015 updates.</li> <li>▪ Number of boardings, number of violations detected, types of violations for the species in question. General level of compliance overall. Updates for 2015.</li> <li>▪ Gear loss concerns Updates for 2015 mostly related to longline gear, crab pots.</li> <li>▪ Relationships and interaction with AWT, updates for 2015. Significant prosecution from NMFS OLE in 2015.</li> <li>▪ Dixon Entrance: foreign fleet fishing activities Russian federation line, foreign vessel encroachment</li> <li>▪ Donut Hole: any fishing activity detected in 2015</li> </ul>

## 6. Assessment Outcome Summary

### A. The Fisheries Management System

There are effective legal and administrative frameworks, appropriate for management of the sablefish fishery, in place at local and national levels. The management system and the fishery operate in compliance with the requirements of local, national and international laws and regulations, including the requirements of the MSA.

An appropriate policy, legal and institutional framework by which the sustainable and integrated use of living marine resources may be achieved exists that considers the fragility of coastal ecosystems, the finite nature of natural resources and the rights, needs and customary practices of coastal communities. In addition when formulating policies for the management of coastal areas the framework takes account of the risks and uncertainties involved.

Management objectives based on the best available scientific evidence are incorporated into Fishery Management Plans (FMPs) which are subscribed to by all interested parties. Management objectives and underlying estimates of stock size explicitly take account of uncertainty and imprecision.

### B. Data Collection, Stock Assessment and Scientific Advice

All fishery removals and mortality of sablefish are considered in the assessment and management of the stock. Reliable and accurate data are provided annually to assess the status of sablefish fisheries and ecosystems. These data including information on retained catch in the directed longline and pot fisheries, by-catch in trawl fisheries, and catches in the Alaskan state-managed fisheries (inside 3 n. mi.), including subsistence fisheries. Several data reporting systems are in place to ensure timely and accurate collection and reporting of catch data. There is a well-established process in place to peer review all appropriate research, stock assessment and management of the sablefish resource in Alaska. This includes review and production of annual SAFE documents, as well as research and assessment of sablefish by ADF&G in state-managed waters.

Target reference points for biomass and fishing mortality (harvest rate) have been developed based on sound scientific analyses. Exploitation levels for the individual management areas are established separately (apportionment) to ensure that localized overfishing does not occur. Precautionary approach-based reference points are used in the management of this stock. Scientific information and stock assessments available are at a consistently high level, and clearly provide the necessary basis for conservation and management decisions. Uncertainties are taken into account in the stock assessment process, and risk assessment is used in providing harvest options.

### C. Management Objectives for the Stock

Conservation and management measures in place ensure the long-term sustainability of the resources. FMPs which are based on the national standards in the Magnuson-Stevens Act have objectives to prevent overfishing and promote sustainable and equitable use of the sablefish resource. NPFMC has established a science-based precautionary approach and harvest control rule and based on the scientific assessment of the stock, uses this approach to determine appropriate harvest levels. A management strategy evaluation of the apportionment strategies used to determine area-specific ABC values for sablefish is underway.

### D. Precautionary Approach

Conservation and management measures in place ensure the long-term sustainability of the resources. FMPs which are based on the national standards in the Magnuson-Stevens Act have objectives to prevent overfishing and promote sustainable and equitable use of the sablefish resource. NPFMC has established a science-based precautionary approach and harvest control rule and based on the scientific assessment of the stock, uses this



approach to determine appropriate harvest levels. A management strategy evaluation of the apportionment strategies used to determine area-specific ABC values for sablefish is underway.

NPFMC uses a multi-tier precautionary approach to management, which includes Optimal Yield (multi-species) and MSY (single species) reference points for the management of groundfish, including sablefish, in the GOA and BSAI areas. The OY takes into consideration the total amount of fish that can be harvested from each area.

#### **E. Implementation Monitoring and Control**

The Magnuson Stevens Act governs the sablefish fisheries in the U.S. The U.S. Coast Guard (USCG) and NMFS Office of Law Enforcement (OLE) enforce Alaska fisheries laws and regulations, especially 50CFR679. The Alaska Wildlife Troopers enforce sablefish regulations in state waters. The violations in this fishery are reported to and investigated by NOAA's Office of Law Enforcement's Alaska Division and prosecuted by NOAA's Office of General Counsel's Enforcement Section. OLE Special Agents and Enforcement Officers conduct complex criminal and civil investigations, board vessels fishing at sea, inspect fish processing plants, review sales of wildlife products on the internet and conduct patrols on land, in the air and at sea. NOAA Agents and Officers can assess civil penalties directly to the violator in the form of Summary Settlements (SS) or can refer the case to NOAA's Office of General Counsel for Enforcement and Litigation (GCEL).

#### **F. Serious Impacts of the Fishery on the Ecosystem**

Both policy and management explicitly recognize the influence of variable environmental conditions on Sablefish stocks in Alaska. The influences of climatic, oceanographic and ecological factors on sablefish growth and survivorship are considered by NPFMC, NOAA AKFSC during development of management fisheries plans.

The NPFMC and NOAA/NMFS conduct assessments and research related to fishery impacts to ecosystems and habitats and how environmental factors affect the fishery. Findings and conclusions are published in the Ecosystem section of the SAFE document, annual Ecosystem Considerations documents, and the various other research reports. The Essential Fish Habitat Environmental Impact Statement (EFH EIS) (NMFS, 2005) concluded that the benthic longline fishery has minimal or temporary impacts on sablefish habitat.

In Alaska, there is a strategy in place to manage most bycatch fish species (main species, groundfish, seabirds) which consists of (1) extensive catch accounting system (2) observer program to estimate discarded catch (3) fishery independent surveys conducted by NOAA- Fisheries (4) statistical stock assessments for all of the main bycatch species (5) a tiered system of assessments that provides for more precautionary annual catch limits when assessments use less precise methods. The tiered, precautionary procedure for setting annual catch limits provides a high likelihood that stocks will be maintained at levels above their reference points and, and clear procedures exist for restricting catch limits if stock rebuilding is necessary.

### **6.1. Conformity Statement**

During this reassessment no non-conformances were found. The Assessment Team recommends that the management system of the applicant fishery, the US Alaska Sablefish fishery, federal (NMFS/NPFMC) and state (ADFG) management, fished with benthic longline, pots and trawl gear (within Alaska's 200 nm EEZ), should be awarded continuing certification to the AK Responsible Fisheries Management Certification Program.

## 7. Fishery Assessment Evidence

### Section A: The Fisheries Management System

#### 7.1. Fundamental Clause 1

There shall be a structured and legally mandated management system based upon and respecting International, National and local fishery laws, for the responsible utilization of the stock under consideration and conservation of the marine environment.

FAO CCRF (1995) 7.1.3/7.1.4/7.1.9/7.3.1/7.3.2/7.3.4/7.6.8/7.7.1/10.3.1

FAO Eco (2009) 28

FAO Eco (2011) 35, 37.3

<b>No. Supporting clauses/sub-clauses</b>	13
<b>Supporting clauses applicable</b>	10
<b>Supporting clauses not applicable</b>	3
<b>Non-conformances</b>	0

#### Supporting Clause 1.1

There shall be an effective legal and administrative framework established at local and national level appropriate for fishery resource conservation and management. The management system and the fishery operate in compliance with the requirements of local, national and international laws and regulations, including the requirements of any regional fisheries management agreement.

FAO CCRF (1995) 7.7.1

FAO Eco (2009) 28

FAO Eco (2011) 35

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

#### Summary Evidence:

There are effective legal and administrative frameworks, appropriate for management of the sablefish fishery, in place at international, Federal and State levels. The management system and the fishery operate in compliance with the requirements of local, national and international laws and regulations, including the requirements of the MSA.

#### Evidence:

Fisheries for sablefish in Alaska are both federally and state managed. In general, groundfish fisheries in the U.S. Exclusive Economic Zone (EEZ; 3 – 200 nm offshore) fall under federal authority, whereas the State of Alaska manages groundfish fishery resources within state territorial (0 – 3 nm) waters. Federal sablefish fisheries (i.e. those occurring between 3 and 200 nm offshore) are managed by the National Marine Fisheries Service (NMFS<sup>6</sup>) under federal Fishery Management Plans (FMPs) adopted by the North Pacific Fisheries

<sup>6</sup> <https://alaskafisheries.noaa.gov/>

Management Council (NPFMC<sup>7</sup> or “Council”). Federal sablefish fisheries occur along the outer coast in the Gulf of Alaska, along the Aleutian Islands and in the Bering Sea with the majority of the harvest from the central Gulf and in Southeast. State sablefish fisheries (i.e. those occurring between 0 and 3 nm offshore) are managed by Alaska Department of Fish and Game (ADFG) and the Alaska Board of Fisheries (BOF<sup>8</sup>). State sablefish fisheries occur in Southeast Alaska, Prince William Sound, Cook Inlet, and in the Aleutian Islands. The majority of sablefish fisheries in Alaska are limited entry and are managed through quota shares.

Sablefish in Alaska are managed by discrete regions to distribute exploitation throughout their wide geographical range. There are four management areas in the Gulf of Alaska: Western, Central, West Yakutat, and East Yakutat/Southeast Outside (SEO) and two management areas in the Bering Sea/Aleutian Islands (BSAI): the eastern Bering Sea (EBS) and the Aleutian Islands (AI) region (Figure 3).

For federal fisheries, the NPFMC recommends regulations to govern the directed sablefish fisheries and makes allocation decisions among user groups in federal waters off Alaska. NPFMC sablefish management measures include a Total Allowable Catch (TAC), which is divided among user groups (i.e. mobile (trawl) and fixed (longlines and pots) and an Individual Fishing Quota (IFQ) program which is used to apportion the majority of the sablefish TAC amongst the fixed gear fleet. Sablefish in federal waters are managed by regions in order to distribute exploitation. The allowable biological catch (ABC) is apportioned between these regions and then allocated between gear types. To support management NMFS conducts stock surveys, stock assessment reports and a multitude of biological and environmental studies, and in connection with the United States Coast Guard (USCG) enforces fisheries regulations. These agencies, and all of their activities and decisions, are subject to the Magnuson-Stevens Fishery Conservation and Management Act, more commonly referred to as the Magnuson-Stevens Act (MSA)<sup>9</sup>, the main legal instrument that forms the legal and administrative framework for sablefish fisheries in the federal waters of the Gulf Of Alaska (GOA) and Bering Sea Aleutian Islands (BSAI). Federal FMPs are written and amended subject to the MSA.

The MSA, most recently reauthorized in 2007, is the primary domestic legislation governing management of marine fisheries within U.S. territorial waters. It established eight Regional Fisheries Management Councils to manage fisheries in the United States Exclusive Economic Zone (EEZ) (from three to 200 nautical miles offshore) including the North Pacific Fishery Management Council (NPFMC)<sup>10</sup> that produces Fishery Management Plans (FMPs) governing fishing operations in the Pacific sablefish fishery.

As is the case for most federal groundfish fisheries, ADFG issues emergency orders governing state sablefish fisheries that duplicate NMFS management actions, except that gear or other restrictions may vary. These emergency orders establish parallel fishing seasons (termed “parallel fisheries”) allowing vessels to fish for groundfish in state waters with the same seasons as the federal fisheries. Where there is a federal and parallel fishery for a species, the state waters fishery usually opens after the parallel fishery closes.

In certain state waters, Alaska sablefish fisheries are managed by ADFG and the BOF outside the IFQ program. State managed fisheries for sablefish occur in Southeast Alaska (including the Northern Southeast Inside and Southern Southeast Inside Subdistricts), Prince William Sound, Cook Inlet, and the Aleutian Islands. The Cook Inlet and the Aleutian Islands state fisheries are minor fisheries and are open access fisheries managed in accordance with a Guideline Harvest Level (GHL), based on harvest history, fishery performance, and the

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<sup>7</sup> [www.fakr.noaa.gov/npfmc/default.htm](http://www.fakr.noaa.gov/npfmc/default.htm)

<sup>8</sup> <http://www.adfg.alaska.gov/index.cfm?adfg=fisheriesboard.main>

<sup>9</sup> [http://www.nmfs.noaa.gov/sfa/laws\\_policies/msa/documents/msa\\_amended\\_2007.pdf](http://www.nmfs.noaa.gov/sfa/laws_policies/msa/documents/msa_amended_2007.pdf)

<sup>10</sup> [www.fakr.noaa.gov/npfmc/default.htm](http://www.fakr.noaa.gov/npfmc/default.htm)

federal survey for the area. Elsewhere, the Prince William Sound, Chatham and Clarence Strait represent major limited entry fisheries. The Prince William Sound sablefish fishery is managed using a GHL derived from the estimated area of sablefish habitat and a yield-per-unit-area model. For the Clarence and Chatham Strait fisheries an annual harvest objective is set with regard to survey and fishery CPUE and biological characteristics of the population. In addition, in Chatham Strait an annual stock assessment is performed which includes a mark-recapture estimate of the population abundance. The state of Alaska also participates in management of federal sablefish fisheries through the ADFG Commissioner’s seat on the NPFMC.

**References:**

**Non-Conformance Number (if relevant)**

**NA**

**Supporting Clause 1.2**

Management measures shall consider 1) the whole stock biological unit (i.e. structure and composition contributing to its resilience) over its entire area of distribution 2) the area through which the species migrates during its life cycle and 3) other biological characteristics of the stock.

FAO ECO (2009) 30.3

FAO ECO (2011) 37.3

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

**Summary Evidence:**

Agencies involved in the management of the eastern North Pacific sablefish fishery consider the whole stock biological unit, the area through which the species migrates during its life cycle and other biological characteristics of the stock when implementing management measures.

**Evidence:**

**1) Consideration of whole stock biological unit over its entire area of distribution**

Sablefish inhabit the northern Pacific Ocean in an arc extending from northern Mexico in the east to northern Japan in the west, with highest concentrations and the majority of catches occurring in Alaskan waters. The population structure of sablefish in Asian waters is poorly studied; however, there is no indication that sablefish in Asian waters contribute significantly, if at all, to the productivity of Alaska sablefish. Currently, there is no directed fishery for sablefish in Russian waters with reported landings as a result of sablefish bycatch in other groundfish fisheries ranging from 7 t to 27 between 2006 and 2011 t.

With regards to eastern North Pacific sablefish, stock assessment scientists have long felt that they form two populations based on differences in growth rate, size at maturity, and tagging studies (McDevitt 1990, Saunders et al. 1996, Kimura et al. 1998); a northern population inhabiting Alaska and northern British Columbia (BC) waters and a southern population inhabits southern BC, Washington, Oregon, and California waters, with mixing of the two populations occurring off southwest Vancouver Island and northwest Washington. However, recent studies (see Section 3.1 for further details) have suggested that, primarily due to their migratory nature, sablefish may in fact form one biological population. According to Hanselman et al. (2015) the similarly low current abundances of Alaskan sablefish and sablefish further south is of concern and is an indication of the need to better understand the contribution to Alaska sablefish productivity from British Columbia and U.S. West Coast sablefish.

Despite eastern North Pacific sablefish potentially consisting of a single biological population, short term migration rates are small and justify the separation of the northerly (Alaskan-northern B.C.) and southerly (southern B.C.-East Coast U.S.A.) populations for fishery management purposes (Kimura et al., 1998). Sablefish are therefore assessed as a single population in Federal waters off Alaska with management and regulatory decisions being implemented at the regulatory area level. The NPFMC explicitly considers sablefish life cycle and migration when recommending apportionments of ABC and OFL between regulatory areas.

The Council and NMFS produce annual Stock Assessment & Fishery Evaluation (SAFE) reports for each fishery under federal jurisdiction, including Alaska sablefish. A small portion of the sablefish stock is harvested under State of Alaska jurisdiction. Both state and federal assessment biologists meet at the NPFMC Plan Team meetings and share assessment information and harvest strategies to assure conservation management over the entire stock distribution. The GOA and BSAI sablefish stocks are both considered to be parts of the same

stock, but separate from sablefish further south along the west coast of North America. But for clarity of management, there are two SAFEs for Alaska sablefish – one for the fishery in the GOA, and the other for the BSAI fishery.

Sablefish have traditionally been thought to form two populations based on differences in growth rate, size at maturity, and tagging studies (McDevitt 1990, Saunders et al. 1996, Kimura et al. 1998). The northern population inhabits Alaska and northern British Columbia waters and the southern population inhabits southern British Columbia, Washington, Oregon, and California waters, with mixing of the two populations occurring off southwest Vancouver Island and northwest Washington. Significant stock structure among the federal Alaska population is unlikely given extremely high movement rates throughout their lives (Hanselman et al. 2015, Heifetz and Fujioka 1991, Maloney and Heifetz 1997, Kimura et al. 1998).

As the biological stock unit encompasses multiple jurisdictions (i.e. U.S. state and federal) the NPFMC and NMFS consider exploitation by all parties when defining exploitation levels and determining stock health to avoid overfishing/depletion of the resource. The NPFMC apportions the ABC and OFL between regulatory areas based on a 5-year exponential weighting of the survey and fishery abundance indices.

## **2) Consideration of area through which the species migrates during its life cycle**

The GOA and BSAI sablefish stocks are both considered to be parts of the same stock, but separate from sablefish further south along the west coast of North America. Juvenile sablefish spend a portion of their life in shallow water, including State waters, prior to migrating to deep water where harvest occurs. No directed harvest occurs for juvenile sablefish, but State and federal biologists assess incidental/total mortalities that are then considered when developing harvest limits and assessments models.

A movement model for Alaskan sablefish was developed for Alaskan sablefish by Heifetz and Fujioka (1991) based on 10 years of tagging data. The model has been updated by incorporating data from 1979 – 2009 in an AD Model Builder program, with time-varying reporting rates, and tag recovery data from ADF&G for State inside waters (Southern Southeast Inside and Northern Southeast Inside). In addition, the study estimated mortality rates from the tagging data (Hanselman et al. 2015).

NMFS conducts extensive research on the northern population of Pacific sablefish throughout the entire area through which the stock migrates during its life cycle. Additionally, the NPFMC explicitly considers sablefish life cycle and migration when recommending apportionments of ABC and OFL between regulatory areas based on a 5-year exponential weighting of the survey and fishery abundance indices.

## **3) Consideration of other biological characteristics of stock contributing to its stability/resilience**

The GOA and BSAI sablefish stocks are both considered to be parts of the same stock, but separate from sablefish further south along the west coast of North America. To account for the biological unity of the stock, harvest is restricted to spawning adult sablefish, and seasons are set to assure each fish has at least one opportunity to spawn. Further, they are managed by discrete regions to distribute exploitation throughout their wide geographical range, including both State and federal waters.

The eastern north Pacific sablefish resource is presently managed based on the existence of two populations, a northern population inhabiting Alaskan and northern British Columbian waters, and a southern population inhabiting the waters off southern British Columbia, Washington, Oregon, and California waters, with mixing of the two populations occurring off southwest Vancouver Island and northwest Washington. Therefore, all sablefish in Alaskan waters are assumed to be part of the same overall stock, studied and managed by NPFMC, NMFS and ADFG, with the majority of Alaskan sablefish being unlikely to spend any portion of their life in the

jurisdiction of another country (i.e. Canada or Russia) (Kimura et al., 1998). The Pacific sablefish stock is apportioned yearly between the various regulatory areas based on a 5-year exponential weighting of the survey and fishery abundance indices. Alaskan sablefish may suffer mortality or other pressures outwit the directed commercial sablefish fishery (i.e. bycatch in other commercial fisheries, recreational and subsistence catches etc.). NMFS, NPFMC and ADFG gather data on all sources of sablefish removals and mortality meaning all potentially significant sources of sablefish are considered and accounted for when assessing stock health.

<b>References:</b>	
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<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>
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**Supporting Clause 1.2.1**

Previously agreed management measures established and applied in the same region shall be taken into account by management.

FAO CCRF (1995) 7.3.1

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
<b>None</b> <input checked="" type="checkbox"/>			
<b>Summary Evidence:</b> The management regime of the Alaskan sablefish fishery takes into account measures previously agreed, established and applied in relation to the management of the fishery.			
<b>Evidence:</b> The NPFMC annually review current and historic management measures deployed in the sablefish fishery and consider possible future modifications to the management regime in light of these. The NPFMC sets its agenda for each meeting in response to both current priority issues and possible future changes/events with the potential to impact the sablefish fishery <sup>11</sup> . While the “issues of the day” may change all meetings are open to the public comment both prior to and during the meeting. The continual public input into the NPFMC process has the effect of ensuring that stakeholder’s issues of concern remain live and are discussed continuously for as long as they remain of importance to the stakeholder.  The Three Meeting Outlook (issue current as of June 27 <sup>th</sup> 2016 <sup>12</sup> ) outlines issues likely to be of concern and therefore be discussed at the following three NPFMC meetings. The Three Meeting Outlook allows stakeholders to prepare and submit comments in advance of meetings the substance of which may then be discussed at the meeting in the relevant fora.  The IFQ Program, and the rules which govern Alaskan sablefish fisheries, are considered by NPFMC and NMFS whenever modifications (e.g. seabird avoidance measures) are proposed. The sablefish IFQ system, issues regarding seabird bycatch, and any other aspect of sablefish fishery management are re-visited on a routine, as-needed basis by NPFMC.  Similarly, for the sablefish fisheries in state waters, ADFG and the BOF routinely take into account all previously agreed management measures. At BOF meetings, all stakeholders are encouraged to propose changes to any regulation which deals with the fisheries under discussion.			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

<sup>11</sup> <http://www.npfmc.org/council-meeting-archive/>

<sup>12</sup> <http://www.npfmc.org/wp-content/PDFdocuments/meetings/threemeetingoutlook.pdf>



**Supporting Clause 1.3**

Where trans-boundary, shared, straddling or highly migratory fish stocks and high seas fish stocks are exploited by two or more States (neighboring or not), the applicant management organizations concerned shall cooperate and take part in formal fishery commission or arrangements that have been appointed to ensure effective conservation and management of the stock/s in question and its environment.

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
<p><b>Summary Evidence:</b>                  The applicant management organizations (NPFMC, NMFS and ADFG) cooperate with their counterpart agencies in Canada to ensure effective conservation and management of the sablefish stock and its environment.</p>			
<p><b>Evidence:</b>                  As discussed previously, the GOA and BSAI sablefish stocks are both considered two parts of the same stock, but separate from sablefish further south along the southern coast of British Columbia and the west coast of North America. To the extent appropriate, NMFS and the NPFMC liaise with other agencies, such as Pacific States Marine Fisheries Commission.</p> <p>Fisheries researchers and scientists from Alaska work closely with those from Canada on assessing the health of sablefish populations in the North Pacific. The Technical Subcommittee (TSC) of the Canada-U.S. Groundfish Committee<sup>13</sup> meets annually to discuss sablefish and other fisheries. The TSC was created by the International Trawl Fishery Committee (now the Canada-U.S. Groundfish Committee) at the latter's initial meeting in Seattle, Washington, on November 4, 1959. The committee meets annually. Their discussions incorporate:</p> <ul style="list-style-type: none"> <li>▪ The exchange of information on the status of groundfish stocks of mutual concern and coordinate, whenever possible, desirable programs of research.</li> <li>▪ Recommendation of the continuance and further development of research programs having potential value as scientific basis for future management of the groundfish fishery.</li> <li>▪ Review of the scientific and technical aspects of existing or proposed management strategies and their component regulations relevant to conservation of stocks or other scientific aspects of groundfish conservation and management of mutual interest.</li> <li>▪ Transmission of approved recommendations and appropriate documentation to appropriate sectors of Canadian and U.S. governments and encourage implementation of these recommendations.</li> </ul> <p>There is no legal harvesting of sablefish in North Pacific waters outside the national jurisdiction of the USA or Canada. Similarly, there is no sablefish harvesting by U.S. vessels in Canadian waters, or by Canadian vessels in U.S. waters. The Coast Guards of the USA and Canada coordinate enforcement activities, as necessary.</p>			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>		

<sup>13</sup> <http://www.psmfc.org/tsc2/>

**Supporting Clause 1.3.1**

Conservation and management measures established for such stock within the jurisdiction of the relevant States for shared, straddling, high seas and highly migratory stocks, shall be compatible. Compatibility shall be achieved in a manner consistent with the rights, competences and interests of the States concerned.

FAO CCRF (1995) 7.1.3, 7.1.4, 7.1.5, 7.3.2, 10.3

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
<b>Summary Evidence:</b> Close cooperation between management agencies in the U.S. and Canada ensures the compatibility of conservation and management measures in place for the eastern North Pacific sablefish stock within and between the jurisdictions of both states involved in prosecuting the fishery, namely the U.S. and Canada.			
<b>Evidence:</b> As discussed previously, U.S. and Canadian management agencies in the U.S. and Canada cooperate to assess the health of sablefish populations in the North Pacific. This close cooperation ensures the compatibility of conservation and management measures in place for the eastern North Pacific sablefish stock within and between the jurisdictions of both states involved in prosecuting the fishery. Additionally, U.S. and Canadian Coast Guards coordinate enforcement activities, as necessary.			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

**Supporting Clause 1.4**

A State not member/participant of a sub-regional or regional fisheries management organization shall cooperate, in accordance with relevant international agreements and law, in the conservation and management of the relevant fisheries resources by giving effect to any relevant measures adopted by such organization /arrangement.

FAO CCRF (1995) 7.1.5

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b>			
<p>The competent sub-regional or regional fisheries management organization charged with managing the Alaskan sablefish fishery is the NPFMC. The GOA and BSAI sablefish stocks are both considered to parts of the same stock, but separate from sablefish further south along the west coast of North America and the Alaskan sablefish fishery is prosecuted solely by U.S. vessels. As a result, the only State involved in the conservation and management of the sablefish resource is Alaska, and to some extent Canada in the far south-east of the stocks range. Other Alaskan state agencies consult continuously with the NPFMC. Canadian agencies cooperate closely with U.S. authorities through both the Canada-U.S. Groundfish Committee and other fora described in detail in 2.1.1.</p>			
<b>Evidence:</b>			
<p>The GOA and BSAI sablefish stocks are both considered to parts of the same stock, but separate from sablefish further south along the west coast of North America and the Alaskan sablefish fishery is prosecuted solely by U.S. vessels. As a result, the only State involved in the conservation and management of the sablefish resource is Alaska, and to some extent Canada in the far south-east of the stocks range. Other Alaskan state agencies consult continuously with the NPFMC. Canadian agencies cooperate closely with U.S. authorities through both the Canada-U.S. Groundfish Committee and other fora described in detail in 2.1.1.</p>			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

**Supporting Clause 1.4.1**

States seeking to take any action through a non-fishery organization which may affect the conservation and management measures taken by a competent sub-regional or regional fisheries management organization or arrangement shall consult with the latter, in advance to the extent practicable, and take its views into account.

FAO CCRF (1995) 7.3.5

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
<p><b>Summary Evidence:</b></p> <p>Other states, prior to taking action through a non-fishery organization that may impact conservation and management measures relevant to the sablefish fishery, consult in advance with and take into account the views of affected organizations within the management framework.</p> <p>The competent sub-regional or regional fisheries management organization charged with managing the Alaskan sablefish fishery is the NPFMC. The GOA and BSAI sablefish stocks are both considered to parts of the same stock, but separate from sablefish further south along the west coast of North America and the Alaskan sablefish fishery is prosecuted solely by U.S. vessels. As a result, the only State whose actions might affect the conservation and management measures taken by the NPFMC is Alaska, and to some extent Canada in the far south-east of the stocks range.</p> <p>Other Alaskan state agencies consult continuously with the NPFMC and Canadian agencies cooperate closely with U.S. authorities through both the Canada-U.S. Groundfish Committee and other fora described in detail in 2.1.1.</p>			
<p><b>Evidence:</b></p> <p>The competent sub-regional or regional fisheries management organization charged with managing the Alaskan sablefish fishery is the NPFMC. The GOA and BSAI sablefish stocks are both considered to parts of the same stock, but separate from sablefish further south along the west coast of North America and the Alaskan sablefish fishery is prosecuted solely by U.S. vessels. As a result, the only State whose actions might affect the conservation and management measures taken by the NPFMC is Alaska, and to some extent Canada in the far south-east of the stocks range. Other Alaskan state agencies consult continuously with the NPFMC. Canadian agencies cooperate closely with U.S. authorities through both the Canada-U.S. Groundfish Committee and other fora described in detail in 2.1.1.</p> <p>The NPFMC facilitates consultation between entities involved in the management of the sablefish resource. NPFMC encourages public participation in the management of the resource and regularly seeks advice from various State, Provincial, and Federal agencies as well as its advisory bodies. (For further details of mechanisms ensuring consultation within the management framework of the sablefish fishery see Clause 1.1 to 1.3.1 inclusive)</p>			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

**Supporting Clause 1.5**

The Applicant fishery’s management system shall actively foster international cooperation and coordination on fishery matters with regard to:

- Information gathering and exchange
- Fisheries research
- Fisheries management
- Fisheries development

FAO CCRF (1995) 7.3.4

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

**Summary Evidence:**

With the Alaskan EEZ being so large and with the Alaskan sablefish stock being considered distinct stocks from sablefish further south, Alaska sablefish stocks are not generally considered to be trans-boundary, except perhaps in the far south-east of the stocks range. As such there is little need for international cooperation between NMFS/NPFMC and other institutions on fishery matters. In any case as previously discussed, U.S. and Canadian management agencies cooperate to the extent appropriate on matters related to information gathering and exchange, fisheries research, fishery management and fisheries development.

**Evidence:**

Research on Alaska sablefish is mostly conducted by NMFS, with participation from ADFG and university scientists. That research forms the basis of the SAFEs, and it also informs and guides the deliberations of the Plan Teams which formulate TACs for consideration by NPFMC and NMFS. Within State waters, ADFG conducts tagging studies, as well as biological and assessment research which are shared with federal scientists.

Other entities involved in collaborative research into Alaskan fisheries include the North Pacific Research Board (NPRB), the National Science Foundation (NSF) and the University of Alaska Fairbanks (UAF). Note this is not an exhaustive list. The NPRB funds major research projects in the Gulf of Alaska<sup>14</sup> and the Bering Sea<sup>15</sup> (the Bering Sea project is conducted in collaboration with the NSF<sup>16</sup>) aimed at examining physical and biological mechanisms that determine the survival of juvenile groundfishes in the GOA and understanding the impacts of climate change and dynamic sea ice cover on the eastern BS ecosystem respectively.

The formulation of sablefish TACs involves a great deal of collaboration among NMFS scientists, NPFMC staff, and NPFMC’s Scientific & Statistical Committee and the allocation of those TACs, and all other management decisions and measures, involves cooperation between NMFS managers, NPFMC staff, NPFMC’s Advisory Panel, the seafood industry, and other stakeholders.

There is very little fisheries development in the Alaska sablefish fishery. Sablefish are harvested by three well-established gear types: demersal long-line, pots (traps), and trawl. Within the Alaskan EEZ, SAFEs consider all known sablefish stocks and there are no “un-developed” sablefish fisheries.

<sup>14</sup> <http://www.nprb.org/gulf-of-alaska-project/about-the-project/>

<sup>15</sup> <http://www.nprb.org/bering-sea-project/about-the-project/>

<sup>16</sup> <http://www.nsf.gov/>

<b>References:</b>	
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>

**Supporting Clause 1.6**

States and sub-regional or regional fisheries management organizations and arrangements, as appropriate, shall agree on the means by which the activities of such organizations and arrangements will be financed, bearing in mind, inter alia, the relative benefits derived from the fishery and the differing capacities of countries to provide financial and other contributions. Where appropriate, and when possible, such organizations and arrangements shall aim to recover the costs of fisheries conservation, management and research.

FAO CCRF (1995) 7.7.4

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
<b>Summary Evidence:</b> The means by which the activities of management organizations involved in the Alaskan sablefish fishery will be financed are agreed. The costs of management, data collection, and enforcement of the Alaskan IFQ program are recovered by NMFS under a cost recovery program mandated by the MSA.			
<b>Evidence:</b> The MSA obligates NMFS to recover the actual costs of management, data collection, and enforcement of the Alaskan IFQ program. The law provides that a fee be paid by IFQ fishermen based on the ex-vessel value of fish landed under the IFQ Program. 25% of the monies collected are deposited in the U.S. Treasury and are available to Congress for annual appropriations to support the North Pacific (IFQ) Loan Program. The remaining 75% is deposited in the Limited Access System Administrative Fund (LASAF) and are available only to the Secretary of Commerce and must be spent on IFQ Program management, data collection, and enforcement.  NMFS produces an annual review of the cost recovery program detailing requirements and responsibilities of fishery participants and NMFS; how the fee is determined; what IFQ Program costs were paid for by the fee; and compares LASAF expenditures between years <sup>17</sup> .			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

<sup>17</sup> <https://alaskafisheries.noaa.gov/sites/default/files/reports/ifq-hs-feerpt2014.pdf>

**Supporting Clause 1.6.1**

Without prejudice to relevant international agreements, States shall encourage banks and financial institutions not to require, as a condition of a loan or mortgage, fishing vessels or fishing support vessels to be flagged in a jurisdiction other than that of the State of beneficial ownership where such a requirement would have the effect of increasing the likelihood of non-compliance with international conservation and management measures.

FAO CCRF (1995) 7.8.1

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b>			
<p>The Alaskan eastern North Pacific sablefish fishery is conducted exclusively within the U.S. EEZ off Alaska and only U.S. flagged vessels are permitted to access the fishery. There is no possibility of the use of flags of convenience occurring.</p> <p>This Clause is <b>NOT APPLICABLE</b> to the Alaskan sablefish fishery.</p>			
<b>Evidence:</b>			
<p>This Clause is <b>NOT APPLICABLE</b> to the Alaskan sablefish fishery.</p>			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>



**Supporting Clause 1.7**

Procedures shall be in place to keep the efficacy of current conservation and management measures and their possible interactions under continuous review to revise or abolish them in the light of new information.

- Review procedures shall be established within the management system.
- A mechanism for revision of management measures shall exist.

FAO CCRF (1995) 7.6.8

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

**Summary Evidence:**

There are established procedures for continuous review of conservation and management measures in the north Eastern Pacific sablefish fishery. Additional mechanisms are also in place to revise/abolish conservation and management measures where necessary and where supported by evidence.

**Evidence:**

The NPFMC annually review their previous, current, and possible future conservation and management measures. The NPFMC sets its agenda for each meeting in response to both current priority issues and possible future changes/events with the potential to impact the sablefish fishery<sup>18</sup> with all meetings being open to the public comment. The continual public input into the NPFMC process effectively provides public scrutiny of the NPFMC’s activities with issues being discussed continuously as long as they remain of importance to the stakeholder.

The Alaskan halibut and sablefish IFQ program has gone through numerous innovations over the years and has been officially modified many times since initial implementation including modifications to trading restrictions, eligibility rules, administrative catch accounting systems and more. In December of 2014, NMFS recommended that the Council initiate a formal and comprehensive review of the Halibut and Sablefish IFQ Program. The Magnuson-Stevens Act requires the NPFMC and NMFS to review all LAPPs that have been approved by the Secretary of Commerce, including those programs approved prior to the enactment of the reauthorized Magnuson-Stevens Act in 2007; additionally, the Act stipulates that these reviews should occur no less frequently than once every 7 years. NMFS recommended that the IFQ program review be initiated by 2017 to meet the requirements of the MSA. Because the IFQ program was enacted prior to the 2007 reauthorization of the MSA, it has not been subject to the mandatory review process of LAPPs under the Act. In the 20 years since implementation of the IFQ program, this will be the first formal and comprehensive review of the program.

Although this will be the first comprehensive review of the IFQ program, there have been numerous regulatory impact reviews and reports produced by NPFMC and NMFS that provide relevant information about quota share ownership and transfers, IFQ use and landings, and with respect to specific provisions in the program (for examples see: (Pautzke and Oliver, 1997<sup>19</sup>; Fina, 2011<sup>20</sup>; NMFS 2014<sup>21</sup>, 2015a<sup>22</sup>; 2016<sup>23</sup>).

<sup>18</sup> <http://www.npfmc.org/council-meeting-archive/>

<sup>19</sup> <https://alaskafisheries.noaa.gov/sites/default/files/reports/ifqpaper.pdf>

<sup>20</sup> [http://www.npfmc.org/wp-content/PDFdocuments/catch\\_shares/Fina\\_CatchShare\\_411.pdf](http://www.npfmc.org/wp-content/PDFdocuments/catch_shares/Fina_CatchShare_411.pdf)

<sup>21</sup> <https://alaskafisheries.noaa.gov/sites/default/files/reports/rtf12.pdf>

<sup>22</sup> <https://alaskafisheries.noaa.gov/sites/default/files/reports/sablefish-transferrpt2015.pdf>

<sup>23</sup> [https://alaskafisheries.noaa.gov/sites/default/files/reports/ifq\\_community\\_holdings\\_95-15.pdf](https://alaskafisheries.noaa.gov/sites/default/files/reports/ifq_community_holdings_95-15.pdf)

An outline of the proposed scope of the IFQ program review, work plan, and examples of public comments can be seen on the NPFMC meeting agendas for December 2015 and February 2016 <sup>24,25,26</sup>.  
 As previously outlined, where areas are of concern are identified revisions to management measures are proposed, debated at NPFMC meetings with resulting recommendations going to the respective agencies for approval. Upon approval, the revised regulations are implemented and enforced by the appropriate agencies.

**References:**

**Non-Conformance Number (if relevant)**

**NA**

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<sup>24</sup> [http://legistar2.granicus.com/npfmc/meetings/2015/12/931\\_A\\_North\\_Pacific\\_Council\\_15-12-07\\_Meeting\\_Agenda.pdf](http://legistar2.granicus.com/npfmc/meetings/2015/12/931_A_North_Pacific_Council_15-12-07_Meeting_Agenda.pdf)

<sup>25</sup> [http://legistar2.granicus.com/npfmc/meetings/2016/2/934\\_A\\_North\\_Pacific\\_Council\\_16-02-01\\_Meeting\\_Agenda.pdf](http://legistar2.granicus.com/npfmc/meetings/2016/2/934_A_North_Pacific_Council_16-02-01_Meeting_Agenda.pdf)

<sup>26</sup>

**Supporting Clause 1.8**

The management arrangements and decision making processes for the fishery shall be organized in a transparent manner.

- Management arrangements
- Decision-making

FAO CCRF (1995) 7.1.9

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
<b>Summary Evidence:</b> The NPFMC’s management arrangements and decision making processes are organized in a transparent manner.			
<b>Evidence:</b> NPFMC’s management arrangements and decision making processes for the fishery are organized in a very transparent manner. The NPFMC sets its agenda for each meeting in response to both current priority issues and possible future changes/events with the potential to impact the sablefish fishery. The Council (and NMFS) provides a great deal of information on their websites, including agenda of meetings, discussion papers, and records of decisions <sup>27</sup> . The Council actively encourages stakeholder participation, and all Council deliberations are conducted in open, public session. As previously discussed, the Three Meeting Outlook <sup>28</sup> outlines issues likely to be of concern and therefore be discussed at the following three NPFMC meetings affording stakeholders the opportunity to prepare and submit comments for discussion in advance of meetings.  The funding sources of the NPFMC, outlined in detail in Clause 1.6, are publically available and are contained in annual reports accounting for both sources of funding and subsequent expenditure.			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

<sup>27</sup> <http://www.npfmc.org/council-meeting-archive/>

<sup>28</sup> <http://www.npfmc.org/wp-content/PDFdocuments/meetings/threemeetingoutlook.pdf>

**Supporting Clause 1.9**

Management organizations not party to the Agreement to promote compliance with international conservation and management measures by vessels fishing in the high seas shall be encouraged to accept the Agreement and to adopt laws and regulations consistent with the provisions of the Agreement.

FAO CCRF (1995) 8.2.6

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> The fishery does not occur in the high seas; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>Evidence:</b> The fishery does not occur in the high seas; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

**7.2. Fundamental Clause 2**

Management organizations shall participate in coastal area management institutional frameworks, decision-making processes and activities related to the fishery and its users, in support of sustainable and integrated resource use, and conflict avoidance.

FAO CCRF (1995) 10.1.1/10.1.2/10.1.4/10.2.1/10.2.2/10.2.4

<b>No. Supporting clauses/sub-clauses</b>	10
<b>Supporting clauses applicable</b>	9
<b>Supporting clauses not applicable</b>	1
<b>Non-conformances</b>	0

**Supporting Clause 2.1**

An appropriate policy, legal and institutional framework shall be adopted in order to achieve sustainable and integrated use of living marine resources, taking into account 1) the fragility of coastal ecosystems and finite nature of their natural resources; 2) allowing for determination of the possible uses of coastal resources and govern access to them, 3) taking into account the rights and needs of coastal communities and their customary practices to the extent compatible with sustainable development. In setting policies for the management of coastal areas, 4) States shall take due account of the risks and uncertainties involved.

FAO CCRF (1995) 10.1.1, 10.1.3, 10.2.3

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

**Summary Evidence:**

An appropriate policy, legal and institutional framework by which the sustainable and integrated use of living marine resources may be achieved exists that considers the fragility of coastal ecosystems, the finite nature of natural resources and the rights, needs and customary practices of coastal communities. In addition when formulating policies for the management of coastal areas the framework takes account of the risks and uncertainties involved.

**Evidence:**

An appropriate policy, legal and institutional framework is adopted in order to achieve sustainable and integrated use of living marine resources, taking into account the fragility of coastal ecosystems, the finite nature of their natural resources and the needs of coastal communities. These include decision-making processes and activities relevant to the fishery resource and its users in support of sustainable and integrated use of living marine resources and avoidance of conflict among users.

The NMFS, NPFMC<sup>29</sup> and ADFG cooperatively manage sablefish stocks within the Alaskan EEZ. The NMFS and NPFMC as federal agencies participate in coastal area management-related institutional frameworks through federal National Environmental Policy Act (NEPA) process<sup>30</sup>. NEPA documents are require to be produced each time regulations are renewed or amended meaning all proposed regulations include NEPA

<sup>29</sup> <http://www.npfmc.org/>

<sup>30</sup> [https://ceq.doe.gov/nepa/Citizens\\_Guide\\_Dec07.pdf](https://ceq.doe.gov/nepa/Citizens_Guide_Dec07.pdf)

considerations. The NEPA process requires information to be made publically available and provides a robust opportunity for public involvement and ensures decisions are made in collaboration with fishery managers, fishermen, fishing organizations and fishing communities. Other State and federal entities (including a brief description of those functions of each related to coastal resource management) that participate in ensuring the sustainable and integrated use of living marine resources within the Alaskan EEZ include, but are not limited to:

**Alaskan Department of Environmental Conservation (DEC)<sup>31</sup>**

The DEC implements statutes and regulations affecting air, land and water quality and is the lead state agency charged with implementing the federal Clean Water Act.

**Alaska Department of Fish and Game (ADFG)<sup>32</sup>**

ADFG has jurisdiction over the mouths of designated anadromous fish streams and legislatively designated state special areas (critical habitat areas, sanctuaries, and refuges). Some marine species also receive special consideration through the State's Endangered Species program.

**Alaskan Department of Natural Resources (DNR)<sup>33</sup>**

DNR manages all state-owned land, water, and natural resources except for fish and game and use the state Endangered Species Program to preserve the habitats of species threatened with extinction.

**DNR Office of Project Management and Permitting (OPMP)<sup>34</sup>**

The OPMP coordinates the review of larger scale projects in the state such as transportation, oil and gas, mining, federal grants, ANILCA coordination, and land use planning.

**U.S. Fish and Wildlife Service (USFWS)<sup>35</sup>**

The USFWS fulfills functions including enforcement of federal wildlife laws, protection of endangered species, restoration of nationally significant fisheries and conservation and restoration of wildlife habitat. Additionally, the USFWS distributes monies collected through the Sport Fish and Restoration Program to State fish and wildlife agencies for fishery projects, boating access and aquatic education.

**Bureau of Ocean Energy Management (BOEM)<sup>36</sup>**

The BOEM is responsible for managing environmentally and economically responsible development and provide safety and oversight of the offshore oil and gas leases. The activities of BOEM overlap extensively with those of ADNR, ADFG and ADEC given the potential impacts of such activities on marine resources.

While the Coastal Management Program for Alaska was not renewed in 2012 upon the expiry of the old program this would in reality only serve to formalize and better define the State's role in decision making processes. Ultimately, the assessment team considers the collectivity of the NEPA and existing State and Federal agencies' processes, to be demonstrably capable of planning and managing coastal developments in a transparent, organized and sustainable way.

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<sup>31</sup> <http://dec.alaska.gov/>

<sup>32</sup> <http://www.adfg.alaska.gov/>

<sup>33</sup> <http://dnr.alaska.gov/>

<sup>34</sup> <http://dnr.alaska.gov/commis/opmp/>

<sup>35</sup> [http://www.fws.gov/help/about\\_us.html](http://www.fws.gov/help/about_us.html)

<sup>36</sup> [http://www.boem.gov/uploadedFiles/Proposed\\_OCS\\_Oil\\_Gas\\_Lease\\_Program\\_2012-2017.pdf](http://www.boem.gov/uploadedFiles/Proposed_OCS_Oil_Gas_Lease_Program_2012-2017.pdf)

Alaska has institutional and legal frameworks that determine the possible uses of coastal resources govern access to them and take into account the rights of coastal fishing communities and their customary practices when doing so. The management framework explicitly recognizes and accounts for the rights of people dependent on marine fishing through NPFMC process, the Western Alaska Community Development Quota (CDQ) Program, allowances for subsistence fisheries in Alaskan waters and consultation with tribes and Native corporations.

**NPFMC processes**

The Council system mandated under the MSA of which the NPFMC is part was designed so that fisheries management decisions were made at the regional level allowing input from affected stakeholders. NPFMC meetings are open and public testimony is taken ensuring that the rights of coastal communities and their historic access to the fishery are considered in the decision making process.

**The Western Alaska Community Development Quota (CDQ) Program<sup>37</sup>**

The Western Alaskan Community Development Quota (CDQ) Program is a federal fisheries program, authorized and governed by the MSA as amended in 2006 (MSA Section 305(i)(1)), which aims to promote fisheries related economic development in western Alaska. The Program involves 65 eligible communities within a fifty-mile radius of the Bering Sea coastline split into six regional organizations, referred to as CDQ groups. The Program allocates a portion of the BSAI harvest of sablefish to CDQ groups. The aims of the Program include:

1. Providing eligible villages with the opportunity to participate and invest in BSAI fisheries
2. Supporting economic development in western Alaska
3. Alleviating poverty and provide economic and social benefits for residents of western Alaska
4. Achieving sustainable and diversified local economies in western Alaska.

**Consultation with tribes and Native corporations<sup>38</sup>**

In Alaska, NOAA's National Marine Fisheries Service (NMFS) consults with tribes and Native corporations about Federal actions that may affect tribal governments and their members. In fact the Alaska National Interest Lands Conservation Act (ANILCA<sup>39</sup>) which conveyed large sections of federal land to settle Alaska native lands claims specifically directs federal agencies to consult and coordinate with the State of Alaska. Executive Order 13175 sets the framework for regular and meaningful consultation and collaboration with Alaska Native representatives in the development of policies, legislation, regulations, and programs.

Risks and uncertainties related to the policies set up for the management of coastal areas are taken into account within and throughout the various NEPA processes, NPFMC proceedings as well as through ANILCA and the Department of Natural Resources (DNR) Office of Project Management and Permitting (OPMP).

**References:**

**Non-Conformance Number (if relevant)**

**NA**

<sup>37</sup> <https://alaskafisheries.noaa.gov/fisheries/cdq>

<sup>38</sup> <https://alaskafisheries.noaa.gov/tribal-consultations>

<sup>39</sup> <http://dnr.alaska.gov/commis/opmp/nilca/>

**Supporting Clause 2.1.1**

States shall establish mechanisms for cooperation and coordination among national authorities involved in planning, development, conservation and management of coastal areas.

FAO CCRF (1995) 10.4.1

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

**Summary Evidence:**

There are mechanisms for cooperation and coordination between the national authorities involved in coastal zone management. These mechanisms relate both specifically to the sablefish resource in the eastern North Pacific as well as to the broader management of activities in the marine environment.

**Evidence:**

There are mechanisms for cooperation and coordination between the national authorities of the U.S. and Canada involved in planning, development, conservation and management of coastal areas in the eastern North Pacific region. These mechanisms relate both specifically to the sablefish resource in the eastern North Pacific as well as to the broader management of activities in the marine environment.

In the context of marine coastal zone management the United States and Canada have one of the world’s oldest and most effective environmental partnerships necessitated by the extensive shared border and diverse ecosystems which require close cooperation among many U.S. states, Canadian provinces, U.S. Tribes, First Nations, and local and federal governments. The two federal governments have implemented over 40 international agreements to facilitate environmental management in the border area with in excess of 100 additional such agreements at the state level between U.S. states and Canadian provinces<sup>40</sup>.

Since 1994, Canada, Mexico and the United States have collaborated in protecting North America’s environment through the North American Agreement on Environmental Cooperation (NAAEC), enacted at the same time as the North American Free Trade Agreement (NAFTA), to ensure that economic growth in the region would be accompanied by effective cooperation and continuous improvement in the environmental protection provided by each country. The NAAEC established a trinational intergovernmental organization, the Commission for Environmental Cooperation (CEC)<sup>41</sup>, to facilitate international collaboration on the protection, conservation, and enhancement of North America’s environment.

The CEC comprises a Council, a Secretariat and a Joint Public Advisory Committee (JPAC) and receives financial support from all three governments concerned. The Council is the governing body of the Commission and is made up of cabinet-level or equivalent representatives of each country, the Secretariat provides technical, administrative and operational support to the Council and JPAC consisting of five citizens from each country advises the Council on any matter within the scope of the NAAEC.

The mission of the CEC is to; *“facilitate collaboration and public participation to foster conservation, protection and enhancement of the North American environment for the benefit of present and future generations, in the context of increasing economic, trade, and social links among Canada, Mexico, and the United States”*.

<sup>40</sup> <https://www.epa.gov/international-cooperation/epa-collaboration-canada>

<sup>41</sup> <http://www.cec.org/about-us/about-cec>



<p>The CEC is mandated to address some of North America’s most pressing environmental priorities through its cooperative work program and other initiatives. Examples of past and current CEC projects related to the marine environment include; <i>“Marine Protected Areas: Strengthening Management Effectiveness and Supporting Coastal Community Resilience”</i>, <i>“Engaging Communities to Conserve Marine Biodiversity through NAMPAN”</i> and <i>“Conserving Marine Species and Spaces of Common Concern”</i> <sup>42,43,44</sup>.</p>	
<b>References:</b>	
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>

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<sup>42</sup> <http://www.cec.org/our-work/projects/marine-protected-areas-strengthening-management-effectiveness-and-supporting-coastal-community-resilience>  
<sup>43</sup> <http://www.cec.org/our-work/projects/engaging-communities-protect-marine-biodiversity-through-nampan>  
<sup>44</sup> <http://www.cec.org/our-work/projects/conserving-marine-species-and-spaces-common-concern>

**Supporting Clause 2.1.2**

States shall ensure that the authority or authorities representing the fisheries sector in the coastal management process have the appropriate technical capacities and financial resources.

FAO CCRF (1995) 10.4.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
<p><b>Summary Evidence:</b>                  The management authorities (NMFS, NPFMC, ADFG etc.) have the appropriate technical capacities and financial resources to effectively represent the fisheries sector in the coastal management process.</p>			
<p><b>Evidence:</b>                  The costs incurred by the NMFS in its management of the Alaskan IFQ Program are recovered as obligated by the MSA through a fee be paid by IFQ fishermen based on the ex-vessel value of their catches landed under the Program. 25% of the monies collected are deposited in the U.S. Treasury and are available to Congress for annual appropriations to support the North Pacific (IFQ) Loan Program. The remaining 75% is deposited in the Limited Access System Administrative Fund (LASAF) and are available only to the Secretary of Commerce and must be spent on IFQ Program management, data collection, and enforcement.</p> <p>Collaboration between management agencies at the technical and research level on stock assessments, sablefish biology, environmental drivers etc. as outlined in Clauses 2.1 and 2.1.1 clearly demonstrate that these agencies have technical capacity necessary to effectively represent their sector in the wider coastal management process.</p>			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>	NA		

**Supporting Clause 2.2**

Representatives of the fisheries sector and fishing communities shall be consulted in the decision making processes involved in other activities related to coastal area management planning and development. The public shall also be kept aware on the need for the protection and management of coastal resources and the participation in the management process by those affected.

FAO CCRF (1995) 10.1.2, 10.2.1

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
<b>Summary Evidence:</b>			
<p>Representatives of the fisheries sector including fishing communities and the wider public are consulted in the decision making processes involved coastal area management, planning and development. In addition the public are kept aware of their rights and responsibilities with respect to the protection of coastal resources and their avenues for participation in the management process.</p>			
<b>Evidence:</b>			
<p>The NMFS and NPFMC as federal agencies participate in coastal area management-related institutional frameworks through federal National Environmental Policy Act (NEPA) process<sup>45</sup>. NEPA processes provide public information and robust and inclusive opportunities for public involvement. Decisions are made through public processes and involvement of fishery managers, fishermen, fishing organizations and fishing communities; actively invited through publicly advertized and scheduled meetings. Assessing the social and cultural value of coastal resources is stated as an explicit part of the decision making process for allocation and use of resources.</p> <p>The NPFMC and NMFS both have processes in place to facilitate public engagement and ensure the concerns of coastal communities are heard. NPFMC conducts open meetings with both oral and written public testimony being taken and NMFS consults with tribes and Native corporations regarding Federal actions that may affect tribal governments and their members. The facilitation of public input ensures that the NPFMC and NMFS are kept abreast of issues of concern to coastal communities and that these are then given due consideration in the Council’s engagement with NEPA processes.</p> <p>Management entities and processes give due publicity to conservation and management measures and ensure that laws, regulations and other legal rules governing their implementation are effectively disseminated. The bases and purposes of such measures are explained to users of the resource in order to facilitate their application and thus gain increased support in the implementation of such measures.</p>			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

<sup>45</sup> [https://ceq.doe.gov/nepa/Citizens\\_Guide\\_Dec07.pdf](https://ceq.doe.gov/nepa/Citizens_Guide_Dec07.pdf)

**Supporting Clause 2.3**

Fisheries practices that avoid conflict among fishers and other users of the coastal area (e.g. aquaculture, tourism, energy) shall be adopted and fishing shall be regulated in such a way as to avoid risk of conflict among fishers using different vessels, gear and fishing methods. Procedures and mechanisms shall be established at the appropriate administrative level to settle conflicts which arise within the fisheries sector and between fisheries resource users and other coastal users.

FAO CCRF (1995) 7.6.5, 10.1.4, 10.15

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

**Summary Evidence:**

Fisheries practices that avoid conflict among fishers and other users of the coastal zone are adopted. Fishing is regulated in such a way as to avoid conflict among fishers using different vessels, gear and fishing methods. Procedures and mechanisms are established to settle conflicts within the fisheries sector and between fisheries resource users and other coastal users.

**Evidence:**

The management system with its open and transparent structures and processes and participatory nature resolves the majority of disputes internally. Dissatisfied parties affected by Council and NMFS decisions can appeal the decision to the Appeals Office in the NMFS Alaska Regional Office, which adjudicates appeals of initial administrative determinations and whose jurisdiction includes the IFQ and CDQ Programs as well as other management programs. These dispute resolution mechanisms have proven to be effective at dealing with most issues avoiding the necessity for disputes to escalate to the stage of legal action. However, in cases where Council and NMFS dispute resolution processes are unable to resolve disputes, parties can and do resolve disputes in the federal court system.

NPFMC meetings provide fora for resolution of potential conflicts with users being afforded the opportunity to testify in person or in writing. In addition, stakeholders may review and submit written comments to the NMFS on proposed rules published in the Federal Register. The NPFMC works closely with ADFG and the BOF to coordinate fishery management programs in state and federal waters off Alaska to address fish habitat concerns, catch limits, allocation issues and other management issues.

The NPFMC and the Alaska Board of Fisheries have also created a joint protocol for development of "local area management plans," or LAMPs, for fisheries at ports where allocation or gear conflicts are present<sup>46</sup>. The Board of Fisheries solicits LAMP proposals and evaluates them for adherence to the protocol before forwarding them to the NPFMC for action. A variety of measures, including moratoriums, harvest caps, and/or exclusion zones for all fisheries, can possibly be implemented as part of a LAMP to address near shore depletion or resolve other user conflicts.

In many cases the NEPA process, deliberately takes into account all resources and users of those resources in order to resolve potential conflicts among users before project approvals are given. Conflict resolution mechanisms include both administrative (through governmental agencies) and legal (through courts of law) procedures. However, in most cases project approvals are withheld until substantive conflicts are resolved.

<sup>46</sup> [http://www.adfg.alaska.gov/static-sf/Region2/ground\\_fish/PDFs/Guidelines.pdf](http://www.adfg.alaska.gov/static-sf/Region2/ground_fish/PDFs/Guidelines.pdf)

The NPFMC is responsible for allocation of the sablefish resource among user groups in Alaska waters.

Conflict among fishers in the directed commercial sablefish fishery has been greatly reduced since the inception in 1995 of the IFQ Program. The switch from a derby style fishery to the IFQ Program, with individual apportionments of the available quota and greatly extended fishing seasons, effectively eliminated the “race to fish” and led to a reduction in gear conflict between fishers.

All gear marking buoys used in the longline and pot sablefish fisheries in Alaskan waters are required to be marked with either the vessel’s State license or registration numbers. Markings must be above the waterline and at least four inches in height and half an inch wide in a contrasting color. The marking of gear allows for the easy identification of its owner, allowing for easier communication between fishers operating in close proximity to each other, thus facilitating cooperation and reducing the potential for conflict.

**References:**

**Non-Conformance Number (if relevant)**

**NA**

**Supporting Clause 2.4**

States and sub-regional or regional fisheries management organizations and arrangements shall give due publicity to conservation and management measures and ensure that laws, regulations and other legal rules governing their implementation are effectively disseminated. The bases and purposes of such measures shall be explained to users of the resource in order to facilitate their application and thus gain increased support in the implementation of such measures.

FAO CCRF (1995) 7.1.10

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

**Summary Evidence:**

Management entities have processes in place to effectively disseminate information relating to conservation and management measures and the bases for and purposes of these measures are explained to resource users in order to facilitate their application and thus gain increased support in their implementation.

**Evidence:**

Management entities have processes in place to effectively disseminate information relating to conservation and management measures, and related laws and regulations. There is a huge variety of avenues and forms in which interested individuals may access a wide range of information relating to the Alaskan sablefish fishery. The [NPFMC](#), [NMFS](#) and [ADFG](#) all run websites where users can access comprehensive up to date information on management and conservation measures in the sablefish fishery. Management organizations also maintain official profiles on various social media platforms from which they can both disseminate information and interact directly with stakeholders<sup>47,48,49</sup>. Management agencies release regular information bulletins<sup>50</sup>, news releases<sup>51</sup> and newsletters<sup>52</sup> informing the public of goings-on in Alaskan fisheries. Management agencies also have dedicated outreach sections that, in addition to attending public events, produce educational resources aimed at providing science-based materials and activities for students and teachers interested in exploring the science behind marine resource management and conservation<sup>53,54</sup>.

The bases and purposes of management and conservation measures are explained to users of the resource in order to facilitate their application and thus gain increased support in the implementation of such measures. As previously described the NPFMC conducts the majority of its business in open fora with stakeholders being afforded the opportunity to both make submissions and comment orally either in person or electronically. The basis for management recommendations is outlined in the supporting documents uploaded to the respective publically accessible web platforms in advance of meetings with sufficient time being given for stakeholders to digest the information and comment accordingly. In this way NPFMC meetings provide fora for resolution of potential issues between resource users and managers in advance of these issues becoming full blown

<sup>47</sup> <https://twitter.com/NOAAFisheriesAK>

<sup>48</sup> <https://www.facebook.com/NOAAFisheriesAK/?ref=hl>

<sup>49</sup> <https://www.facebook.com/alaskafishandgame>

<sup>50</sup> <https://alaskafisheries.noaa.gov/infobulletins/search/>

<sup>51</sup> <https://alaskafisheries.noaa.gov/news-releases/search>

<sup>52</sup> <http://www.npfmc.org/wp-content/PDFdocuments/newsletters/news416.pdf>

<sup>53</sup> <http://www.afsc.noaa.gov/Education/default.htm>

<sup>54</sup> [http://www.nmfs.noaa.gov/educators\\_students/education.html](http://www.nmfs.noaa.gov/educators_students/education.html)

conflicts thereby facilitating stakeholder “buy in” and possibly increasing support for proposed management measures within the community.

**References:****Non-Conformance Number (if relevant)****NA**

**Supporting Clause 2.5**

The economic, social and cultural value of coastal resources shall be assessed in order to assist decision-making on their allocation and use.

FAO CCRF (1995) 10.2.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

**Summary Evidence:**

The economic, social and cultural value of coastal resources is regularly assessed in order to assist decision-making on their allocation and use. There are comprehensive networks for the collection and analysis of data and results are readily available.

**Evidence:**

The value of coastal resources from economic, institutional and social perspectives is regularly assessed in order to assist decision makers with allocation and use decisions. The economic, social and cultural value of Alaskan fisheries are continually assessed to assist decision-making on their allocation with the results being presented annually in economic Stock Assessment and Fishery Evaluation (SAFE) reports alongside ecosystem and Stock Assessment SAFEs<sup>55</sup>.

NOAA’s Alaska Fisheries Science Center (AFSC) runs the Economic and Social Sciences Research Program in Alaska<sup>56</sup>. The aim of the Program is to provide economic and sociocultural information to assist NMFS in meeting its stewardship responsibilities with activities being conducted in support of this mission including:

- collecting economic and sociocultural data relevant for the conservation and management of living marine resources
- developing models to use that data both to monitor changes in economic and sociocultural indicators and to estimate the economic and sociocultural impacts of alternative management measures
- preparing reports and publications
- participating on NPFMC, NMFS, and inter-agency working groups
- preparing and reviewing research proposals and programs
- preparing analyses of proposed management measures
- assisting Alaska Regional Office and NPFMC staff in preparing regulatory analyses
- providing data summaries

Many of the activities of the Program are conducted in collaboration with other Federal and State agencies and universities. Current research topics being addressed include regional economic impact models, behavioral models of fishing operations, indicators of economic performance, and the non-market valuation of living marine resources.

In 2005, AFSC compiled baseline socioeconomic information about 136 Alaska communities most involved in commercial fisheries compiling information from the US Census, ADFG, CFEC, NMFS Restricted Access Management Division, Alaska Department of Community and Economic Development, and various community groups, websites, and archives in the process. In 2011 an exercise whereby the scope of the original evaluations was expanded led to updated profiles being produced for a total of 196 communities. The new

<sup>55</sup> <http://www.afsc.noaa.gov/REFM/Docs/2015/economic.pdf>

<sup>56</sup> <http://www.afsc.noaa.gov/REFM/Socioeconomics/Default.php>



profiles add a significant amount of new information to help provide a better understanding of each community’s reliance on fishing. Introductory materials cover purpose, methods, and an overview of the profiled communities in the larger context of the state of Alaska and North Pacific fisheries. The community profiles comprise additional information including, but not limited to, annual population fluctuation, fisheries-related infrastructure, community finances, natural resources, educational opportunities, fisheries revenue, shore-based processing plant narratives, landings and permits by species, and subsistence and recreational fishing participation, as well as information collected from communities in the Alaska Community Survey, which was implemented during summer 2011, and the Processor Profiles Survey, which was implemented in Fall 2011. Comprehensive community profiles, concise snapshots and searchable maps of communities involved in commercial, recreational and subsistence fishing may be found on the AFSC website<sup>57,58</sup>.

The Alaska Fisheries Information Network (AKFIN) was established in 1997 in response to an increased need for detailed, organized fishery information to aid decision-making by managers with the aims of consolidating, managing and dispensing information related to commercial fishing in Alaska<sup>59</sup>. The AKFIN maintains an analytic database of both state and federal historic, commercial Alaska fisheries data relevant to the needs of fisheries analysts and economists and to provide that data in a usable format.

<b>References:</b>	
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>

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<sup>57</sup> <http://www.afsc.noaa.gov/REFM/Socioeconomics/Projects/CPU.php>

<sup>58</sup> <http://www.afsc.noaa.gov/maps/ESSR/commercial/default.htm>

<sup>59</sup> <http://www.akfin.org/about-akfin>

**Supporting Clause 2.6**

States shall cooperate at the sub-regional level in order to improve coastal area management, and in accordance with capacities, measures shall be taken to establish or promote systems for research and monitoring of the coastal environment, in order to improve coastal area management, and promote multidisciplinary research in support and improvement of coastal area management using physical, chemical, biological, economic, social, legal and institutional aspects.

FAO CCRF (1995) 10.2.4, 10.2.5, 10.3.3

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

**Summary Evidence:**

Systems for research and monitoring of the coastal environment are established. Monitoring of the coastal environment in Alaska is performed by federal and state agencies. Economic and social parameters are routinely assessed by the NPFMC, NMFS and ADFG either during the NEPA review of plan amendments or during their on-going studies and evaluations.

**Evidence:**

Monitoring of the coastal environment in Alaska is performed by federal and state agencies. Economic and social parameters are routinely assessed by the NPFMC, NMFS and ADFG either during the NEPA review of plan amendments or during their on-going studies and evaluations.

As previously described in Clause 2.1 the NMFS and NPFMC as federal agencies participate in coastal area management-related institutional frameworks through federal NEPA processes. Other State and federal entities that cooperate at the sub-regional level in order to improve coastal area management include:

- Alaskan Department of Environmental Conservation (DEC)
- Alaska Department of Fish and Game (ADFG)
- Alaskan Department of Natural Resources (DNR)
- DNR Office of Project Management and Permitting (OPMP)
- U.S. Fish and Wildlife Service (USFWS)
- Bureau of Ocean Energy Management (BOEM)

(Brief descriptions of the roles of each as they relate to coastal area management may be found in supporting evidence for Clause 2.1.)

Other entities involved in collaborative research in the North Pacific region include the Alaska Fisheries Science Center (AFSC), North Pacific Research Board (NPRB), NMFS Pacific Marine Environmental Lab (PMEL) and institutes of higher learning such as the University of Alaska Fairbanks' (UAF) Institute of Marine Science (IMS).

The AFSC's "Ecosystem Monitoring and Assessment Program" (EMA) aims to improve and reduce uncertainty in stock assessment models of commercial fish and shellfish species through the collection of observations of survey catch and oceanography. Its oceanographic observations include temperature, conductivity, salinity, density, photosynthetically available radiation (PAR), oxygen, Chlorophyll a, and estimates of the composition and biomass of phytoplankton and zooplankton (includes jellyfish) species.

The NPRB funds major research projects in the Gulf of Alaska<sup>60</sup> and the Bering Sea<sup>61</sup> aimed at examining physical and biological mechanisms that determine the survival of juvenile groundfishes in the GOA and understanding the impacts of climate change and dynamic sea ice cover on the eastern BS ecosystem respectively. For oceanography, the NPRB has funded numerous studies describing baseline oceanographic parameters and supported environmental buoy arrays.

PMEL regularly collect oceanographic and environmental data important to understanding the changing habitat of sablefish and other marine species in Alaskan waters<sup>62</sup>.

The IMS is the oldest and largest unit of the UAF’s School of Fisheries and Ocean Science and is the home for research in oceanography and marine biology, including graduate student research for M.S. and Ph.D. degrees. IMS conducts studies in the world's oceans, with particular emphasis on arctic and Pacific subarctic waters, including collaborative, multidisciplinary ecosystem studies of the waters around Alaska. IMS also conducts studies that form part of larger national and international cooperative programs<sup>63</sup>. IMS faculty and research staff provides expertise in marine biology, biological oceanography, physical, chemical and geological oceanography with major areas of research focused around:

- ecosystem structure and dynamics
- effects of climate change
- oceanographic and ecosystem factors affecting Alaskan fisheries
- applied research problems facing the U.S. Arctic offshore oil and gas industry

ADFG Habitat Division<sup>64</sup> conducts research on coastal and marine environments throughout Alaska in an effort to document and mitigate human-related impacts, changes in habitat & species abundance. The agency also collects physical and chemical data, including temperature, depth, salinity and conductivity during their St. Matthew's pot survey using data loggers placed on the survey pots.

The NMFS' Habitat Conservation Division (HCD) works to avoid, minimize, or offset adverse anthropogenic effects on Essential Fish Habitat (EFH) and living marine resources in Alaska. This work includes conducting and/or reviewing environmental analyses for a large variety of activities including commercial fishing. HCD focuses on activities in habitats used by federally managed fish species in marine, estuarine, and freshwater areas<sup>65</sup>.

The Coast Guard enforces fisheries laws at sea including regulations to aid the recovery of marine protected species and their associated habitats<sup>66</sup>.

<b>References:</b>	
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>

**Supporting Clause 2.7**

<sup>60</sup> <http://www.nprb.org/gulf-of-alaska-project/about-the-project/>  
<sup>61</sup> <http://www.nprb.org/bering-sea-project/about-the-project/>  
<sup>62</sup> <http://www.pmel.noaa.gov>  
<sup>63</sup> <http://www.uaf.edu/sfos/research/institute-of-marine-scienc/research-overview/>  
<sup>64</sup> <http://www.adfg.alaska.gov/index.cfm?adfg=habitatresearch.main>  
<sup>65</sup> <http://www.fakr.noaa.gov/habitat/default.htm>  
<sup>66</sup> <http://www.uscg.mil/hq/cg5/cg531/LMR.asp>

States shall, within the framework of coastal area management plan, establish management systems for artificial reefs and fish aggregation devices. Such management systems shall require approval for the construction and deployment of such reefs and devices and shall take into account the interests of fishers, including artisanal and subsistence fishers.

FAO CCRF (1995) 8.11.3

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	
<td>None <input checked="" type="checkbox"/></td>				None <input checked="" type="checkbox"/>
<p><b>Summary Evidence:</b>                  There is no evidence to suggest that either sablefish, or species with similar biological characteristics, have benefitted from the use of artificial structures. The use of artificial structures is neither practical nor appropriate for sablefish. There is no use of artificial structures for the benefit of the north Eastern Pacific sablefish stock; as such this Clause is <b>NOT APPLICABLE</b>.</p>				
<p><b>Evidence:</b>                  According to Alaska Responsible Fisheries Management (RFM) Certification Program Guidance to Performance Evaluation for the Certification of Wild Capture and Enhanced Fisheries in Alaska Version 1.3<sup>67</sup>, the use of artificial structures may be appropriate for some stocks but not necessary for all. This clause may therefore <b>not be applicable</b> if such structures are not practical or appropriate for stocks. The use of artificial structures should be considered appropriate if one or more of the species under assessment has benefitted from the use of artificial structures in other fisheries, or if species with similar biological characteristics have benefitted from the use of artificial structures in other fisheries.</p> <p>There is no evidence to suggest that either sablefish has benefitted from the use of artificial structures in either the Alaskan or in other fisheries. There is also no evidence that species with similar biological characteristics have benefitted from the use of artificial structures in other fisheries. The use of artificial structures is neither practical nor appropriate for sablefish. There is no use of artificial structures for the benefit of the sablefish stock; as such this Clause is <b>NOT APPLICABLE</b>.</p>				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>	

<sup>67</sup> <http://www.alaskaseafood.org/wp-content/uploads/2016/05/Scoring-Guidance-for-AK-RFM-V-1.3May2016.pdf>

**Supporting Clause 2.8**

In the case of activities that may have an adverse transboundary environmental effect on coastal areas, States shall:

- a) Provide timely information and if possible, prior notification to potentially affected States;
- b) Consult with those States as early as possible.

FAO CCRF (1995) 10.3.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

**Summary Evidence:**

Were events such as oil spills, outbreaks of marine invasive species or aquaculture farms escapes to occur in Alaskan waters there are management plans in place to address the resulting fallout. The U.S. also has oil spill response agreements with Canada and Russia, both of which are member states of the OPRC Convention. Additionally, there are systems to allow the early sharing of information with the relevant Canadian authorities should such events have the potential for spill over impacts on Canadian waters.

**Evidence:**

**Oil and Hazardous Substances**

The International Convention on Oil Pollution Preparedness, Response and Co-operation (OPRC) is an international maritime convention establishing measures for dealing with marine oil pollution incidents nationally and in co-operation with other countries<sup>68</sup>. The OPRC Convention was drafted within the framework of the International Maritime Organization (IMO) before being adopted in 1990, entering into force in 1995 and having a Protocol relating to hazardous and noxious substances added in 2000. As of April 2016, there are 109 state parties to the convention including those countries most likely to be impacted by a marine pollution incident in Alaskan waters the U.S., Canada and Russia.

States that are party to the Convention undertake, individually or jointly, to take all appropriate measures to prepare for and respond to oil pollution incidents. Parties are additionally required to co-operate and provide advisory services, technical support and equipment for the purpose of responding to an oil pollution incident upon the request of any Party affected or likely to be affected by such incident. In short this means that under the Convention, the U.S. can both call upon other signatory states to provide assistance in the event of a marine pollution incident within U.S. waters, and be called upon to provide reciprocal assistance should a similar event occur in another signatory state.

The Convention includes a requirement to report without delay any event, or indeed any observed event, involving a discharge, probable discharge or the presence of oil at sea to either the nearest coastal State, in the case of a ship, or to the coastal State to whose jurisdiction the unit is subject, in the case of an offshore unit. Similarly persons having charge of sea ports and oil handling facilities are required to report without delay any event involving a discharge or probable discharge of oil or the presence of oil to the competent national authority.

<sup>68</sup><http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/Default.aspx>

While international marine pollution contingency plans for the Canada-U.S. contiguous waters have been in place since the early 1970s the provisions of OPRC necessitated further revisions to the Canada-United States Joint Marine Pollution Contingency Plan (JCP)<sup>69</sup>. The U.S. and Canadian Coast Guards are the custodians of the plan which is intended to outline and define roles and responsibilities in the event of a marine pollution incident and provide non-binding guidance to the respective Coast Guards, as well as other appropriate authorities, in coordinating preparedness and response operations.

The Alaska Department of Environmental Conservation's Division of Spill Prevention and Response (SPAR) is responsible for protecting Alaska's land, waters, and air from oil and hazardous substance spills by preventing, responding to and ensuring the clean-up of unauthorized discharges of oil and hazardous substances<sup>70</sup>. SPAR has developed the Prevention and Emergency Response Program whose mission is to protect public safety, public health and the environment by preventing and mitigating the effects of oil and hazardous substance releases and ensuring their cleanup through government planning and rapid response<sup>71</sup>. During a spill response, PERP staff carry out a variety of key tasks, depending on the size and nature of the incident including;

- Identifying the spiller or "responsible party"
- Determining the volume spilled and recovered
- Tracking the movement of the spill
- Coordinating with all local, state and federal interests using the Incident Command System (ICS) outlined in the State of Alaska Disaster Response Plan<sup>72</sup> and the Alaska Incident Management System Guide (AIMS) For Oil and Hazardous Substance Response<sup>73</sup>

The Oil and Hazardous Substance Release Prevention and Response Fund, which is based on a per-barrel surcharge on crude oil production, was created in 1986 to provide funds for the safe handling and clean-up of oil and hazardous substances. State clean-up costs are recovered from the spiller, who is ultimately responsible for these costs. SPAR may also seek federal reimbursement from the national Oil Spill Liability Trust Fund for costs incurred in oil spill response activities.

The Pacific States/British Columbia Oil Spill Task Force is an organization comprised of representatives from state and provincial environmental agencies in the Pacific coastal area resulting from a memorandum signed by the governors of the U.S. states of Alaska, Washington, Oregon, and California, and the premier of the Canadian Province of British Columbia in 1989; Hawaii joined the Task Force in 2001 further broadening its regional scope. The task force was initially created in response to the need for cross-border coordination and cooperation in the wake of two major spill events, namely the oil barge *Nestucca* (December 1988) and *Exxon Valdez* (March 1989).

The Task Force's mission is to improve prevention, preparation, and response to oil spills on a state and provincial level. It achieves this by collecting and sharing data on oil spills, coordinating oil spill prevention projects, and promoting regulatory safeguards.

### **Marine Non-native/Invasive Species Management**

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<sup>69</sup> <http://www.dfo-mpo.gc.ca/Library/343409.pdf>

<sup>70</sup> <http://dec.alaska.gov/spar/index.htm>

<sup>71</sup> <http://dec.alaska.gov/spar/PPR/docs/perp.pdf>

<sup>72</sup> [https://dec.alaska.gov/spar/ppr/plans/adecc\\_disaster.pdf](https://dec.alaska.gov/spar/ppr/plans/adecc_disaster.pdf)

<sup>73</sup> [http://dec.alaska.gov/spar/PPR/docs/AIMS\\_Guide-Complete\(Nov02\).pdf](http://dec.alaska.gov/spar/PPR/docs/AIMS_Guide-Complete(Nov02).pdf)

There are numerous State and Federal agencies concerned with the management of biological threats with the potential to have adverse transboundary environmental effects on coastal areas including ADFG, the Aquatic Nuisance Species (ANS) Task Force and the National Invasive Species Council (NISC).

The National Invasive Species Council (NISC) was created by Executive Order in 1999 and provides high-level interdepartmental coordination of federal invasive species actions as well as working with other federal and non-federal groups to address invasive species issues at the national level<sup>74</sup>.

The ANS Task Force is an interagency committee established under the Nonindigenous Aquatic Nuisance Prevention and Control Act 1990 (NANPPCA) that is currently made up of 13 Federal Agencies<sup>75</sup>. The Task Force, co-chaired by the USFWS and NOAA, is charged with coordinating, developing and implementing a program to prevent the introduction and dispersal of ANS in U.S. waters, to monitor, control and research such species, and to disseminate information regarding ANS. This program is outlined in the Task Force Strategic Plan which undertakes to fulfil the provisions of the NANPPCA in addressing aquatic invasive species issues<sup>76</sup>. In 2002, ADFG prepared a management plan to address the threat posed by invasive species to the aquatic ecosystems in Alaska; *“The Alaska Aquatic Nuisance Species Management Plan”* that was approved by the federal Aquatic Nuisance Species (ANS) Task Force<sup>77</sup>. Both the Task Force Strategic and the Alaska Aquatic Nuisance Species Management Plans espouse the importance of communication and education in the prevention of nuisance species.

**Aquaculture/Mariculture Management**

U.S. federal and state permits require containment management systems at all marine sites and enforce these measures through regular inspections and audits. With respect to aquaculture activities in the marine environment, advanced containment systems and improved management practices have dramatically reduced escapes from U.S. fish farms in the last 10 years<sup>78</sup> and this trend is likely to continue as equipment and husbandry techniques continue to evolve.

ADFG’s Mariculture Program permits and regulates aquatic farming in a manner that ensures the protection of the state’s fish, game, and aquatic plant resources<sup>79</sup>. In Alaska, the mariculture industry primarily produces oysters, clams, and mussels. Among its core activities the Mariculture Program ensures that aquatic farming does not significantly alter an established fishery resource and is compatible with fish and wildlife resources and their habitat.

<b>References:</b>	
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>

<sup>74</sup> <https://www.doi.gov/invasivespecies/>

<sup>75</sup> <http://www.anstaskforce.gov/default.php>

<sup>76</sup> <http://www.anstaskforce.gov/Documents/ANSTF%20Strategic%20Plan%202013-2017.pdf>

<sup>77</sup> <http://www.adfg.alaska.gov/FedAidpdfs/RIR.5J.2002.10.pdf>

<sup>78</sup> [http://www.nmfs.noaa.gov/aquaculture/faqs/faq\\_aq\\_environment.html#8what](http://www.nmfs.noaa.gov/aquaculture/faqs/faq_aq_environment.html#8what)

<sup>79</sup> <http://www.adfg.alaska.gov/index.cfm?adfg=fishingaquaticfarming.programinfo>

**7.3. Fundamental Clause 3**

Management objectives shall be implemented through management rules and actions formulated in a plan or other framework.

FAO CCRF (1995) 7.3.3/7.2.2  
 FAO ECO (2009) 28.1, 28.2  
 FAO ECO (2011) 35.1, 35.2

<b>No. Supporting clauses/sub-clauses</b>	7
<b>Supporting clauses applicable</b>	7
<b>Supporting clauses not applicable</b>	0
<b>Non Conformances</b>	0

**Supporting Clause 3.1**

Long term management objectives shall be translated into a plan or other management document (taking into account uncertainty and imprecision) and be subscribed to by all interested parties.

FAO CCRF (1995) 7.3.3  
 FAO ECO (2009) 28.1  
 FAO ECO (2011) 35.1

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

**Summary Evidence:**

Management objectives based on the best available scientific evidence are incorporated into Fishery Management Plans (FMPs) which are subscribed to by all interested parties. Management objectives and underlying estimates of stock size explicitly take account of uncertainty and imprecision.

**Evidence:**

As previously outlined, NPFMC, NMFS and ADFG cooperatively manage the Alaskan sablefish fishery. For fisheries in federal waters management decisions are made by the NPFMC, and implemented and enforced by NMFS. The NPFMC is bound by the Magnuson-Stevens Fishery Conservation and Management Act (MSA) which is the primary domestic legislation governing management of marine fisheries in U.S. waters. The MSA sets out ten National Standards Guidelines for fishery conservation and management, specifies long-term objectives for U.S. fisheries and establishes a formal set of processes for the setting of short-term objectives and management measures aimed at achieving those long-term objectives. The Guidelines direct the relevant authorities, in this case the NPFMC, to develop FMPs that apply the precautionary approach when setting harvest control rules in U.S. fisheries. The Guidelines also prescribe how uncertainty should be addressed such that there is a low risk that management limits are exceeded, mandating that HCRs become increasingly conservative as either estimates of stock size decrease or uncertainty increases.



The NPFMC outlines its management objectives for groundfish fisheries in the Gulf of Alaska (GOA) and the Bering Sea and Aleutian Islands Management Area (BSAI) in two separate FMPs<sup>80,81</sup>. These management objectives are consistent across both FMPs and are intended to frame consideration of potential management measures at annual NPFMC meetings. As of the August 2015 editions of both FMPs, a total of 45 objectives for GOA and 46 for BSAI, organized into 9 broader policy objectives, have been outlined. The policy objectives into which the management objectives are currently organized are:

- Prevent Overfishing
- Promote Sustainable Fisheries and Communities
- Preserve Food Web
- Manage Incidental Catch and Reduce Bycatch and Waste
- Avoid Impacts to Seabirds and Marine Mammals
- Reduce and Avoid Impacts to Habitat
- Promote Equitable and Efficient Use of Fishery Resources
- Increase Alaska Native Consultation
- Improve Data Quality, Monitoring and Enforcement

The NPFMC develops its fishery regulations pursuant and these regulations are implemented only after review and rulemaking conducted by the NMFS. The NPFMC process is extremely transparent and inclusive of all stakeholders; all stakeholders are active participants.

As previously discussed the NPFMC is mandated under the MSA to take uncertainty into account in its management of the fishery.

**References:**

**Non-Conformance Number (if relevant)**

**NA**

<sup>80</sup> <http://www.npfmc.org/wp-content/PDFdocuments/fmp/GOA/GOAfm.pdf>

<sup>81</sup> <http://www.npfmc.org/wp-content/PDFdocuments/fmp/BSAI/BSAIfm.pdf>

**Supporting Clause 3.2**

Management measures shall provide inter alia that:

**Supporting Clause 3.2.1**

Excess fishing capacity shall be avoided and exploitation of the stocks remains economically viable.

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
<p><b>Summary Evidence:</b>                  Measures, namely the IFQ and CDQ programs, are in place to ensure that excess fishing capacity is avoided and exploitation of the stocks remains economically viable.</p>			
<p><b>Evidence:</b>                  In 1995 NMFS implemented the NPFMC’s program of Individual Fishing Quotas (IFQs) established under amendments 15 and 20 to the BSAI and GOA FMPs. The IFQ program was explicitly intended to alleviate excess fishing capacity and improve the economic viability of the industry. The quota share system resulted in the removal of excess fishing capacity, fewer active vessels deploying less gear, greatly extended fishing seasons and increased economic viability within the fishing industry. The rationalization program has incentivized responsible fishing practices with gear losses, damage as a result of on-deck sorting and deadloss all having been reduced. Prior to rationalization, all vessels participated in a “race to fish” scenario. When the fisheries were rationalized, the number of qualifying vessels was reduced. Today fewer vessels are needed to take the TAC thereby reducing operational costs and increasing overall efficiency.</p> <p>The Western Alaska Community Development Quota (CDQ) program, intended to help develop commercial fisheries in communities of the BSAI coast, by allowing them exclusive access to specified amounts of halibut and sablefish in the BSAI management area, was established in parallel to the IFQ program.</p> <p>NMFS Alaska Regional Office’s Restricted Access Management Program (RAM) is responsible for managing Alaska Region permit programs, including those that limit access to the Federally-managed fisheries of the North Pacific. RAM responsibilities include: providing program information to the public, determining eligibility and issuing permits, processing transfers, collecting landing fees and related activities.</p>			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

**Supporting Clause 3.2.2**

The economic conditions under which fishing industries operate shall promote responsible fisheries.

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
<b>Summary Evidence:</b>			
<p>There are management measures in place to monitor the economic conditions under which the fishery operates providing evidence of the general economic value of the resource and its benefit to both fishermen and fishing communities. Management measures in the fishery incentivize responsible fishing practices</p>			
<b>Evidence:</b>			
<p>In 1995, the NPFMC instituted a catch sharing mechanism that created quota shares for GOA and BSAI sablefish fisheries resulting in the removal of excess fishing capacity, fewer active vessels deploying less gear, greatly extended fishing seasons and increased economic viability within the fishing industry. Prior to rationalization, all vessels participated in a “race to fish” scenario. When the fisheries were rationalized, the number of qualifying vessels was reduced. Today fewer vessels are needed to take the TAC thereby reducing operational costs and increasing overall efficiency. The IFQ and CDQ programs have incentivized responsible fishing practices with gear losses and discard mortality of undersized sablefish having been reduced.</p> <p>As discussed in detail in Clause 2.5, the economic conditions under which the sablefish operates are regularly assessed and analyzed with results being presented annually in economic SAFE reports. The AFSC has also compiled baseline socioeconomic information about those Alaska’s coastal communities most involved in commercial fisheries. The resulting profiles provide a greater understanding of each community’s reliance on fishing for its economic wellbeing and the potential impacts management measures might have on those communities.</p>			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

**Supporting Clause 3.2.3**

The interests of fishers, including those engaged in subsistence, small-scale and artisanal fisheries shall be taken into account.

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
<b>None</b> <input checked="" type="checkbox"/>			
<b>Summary Evidence:</b> The interests of fishers, including those engaged in subsistence, small-scale and artisanal fisheries are taken into account during the development of management measures.			
<b>Evidence:</b> The interests of all fishers are explicitly, thoroughly, and routinely taken into account. NPFMC and NMFS devote a great deal of effort, with continuous stakeholder participation, in managing the commercial, sport, and subsistence fisheries. Subsistence is defined in Alaska state laws as the “noncommercial customary and traditional uses” of fish and wildlife <sup>82,83</sup> . Special permits for community harvest, ceremonial, and educational purposes also are available to qualified Alaska communities and Alaska Native Tribes.  The CDQ program allocates a percentage of BSAI quotas for sablefish to eligible communities and aims to promote fisheries related economic development in western Alaska <sup>84</sup> . The Program involves 65 eligible communities organized into six regional organizations, referred to as CDQ groups, each of which is allocated quota for BSAI sablefish. In addition to the CDQ program, the Community Quota Enterprise (CQE) program allows eligible villages to purchase additional harvest rights (in the form of IFQs), to further enhance their economies <sup>85</sup> .  In Alaska, NMFS consults with tribes and Native corporations regarding Federal actions that may affect tribal governments and their members <sup>86</sup> . There is a framework for regular consultation and collaboration with Alaska Native representatives in the development of policies, legislation, regulations, and programs.			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

<sup>82</sup> <http://www.adfg.alaska.gov/index.cfm?adfg=subsistence.faqs#QA3>

<sup>83</sup> [http://www.adfg.alaska.gov/static/regulations/fishregulations/pdfs/commercial/2016\\_2017\\_subsistence\\_pu.pdf](http://www.adfg.alaska.gov/static/regulations/fishregulations/pdfs/commercial/2016_2017_subsistence_pu.pdf)

<sup>84</sup> <https://alaskafisheries.noaa.gov/fisheries/cdq>

<sup>85</sup> <https://www.commerce.alaska.gov/web/ded/fin/loanprograms/communityquotaentity.aspx>

<sup>86</sup> <https://alaskafisheries.noaa.gov/tribal-consultations>

**Supporting Clause 3.2.4**

Biodiversity of aquatic habitats and ecosystems shall be conserved and endangered species shall be protected. Where relevant, there shall be pertinent objectives, and as necessary, management measures.

FAO CCRF (1995) 7.2.2

FAO ECO (2009) 28.2

FAO ECO (2011) 35.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
<b>Summary Evidence:</b>			
<p>There are management measures to ensure that the biodiversity of aquatic habitats and ecosystems are conserved, and endangered species protected which reflect the existence of management objectives designed to achieve same.</p>			
<b>Evidence:</b>			
<p>Conservation of aquatic habitats and biodiversity are integral parts of NPFMC’s management process as required under the MSA-EHF. These concerns and decisions are summarized in the Ecosystems Considerations chapter of the NPFMC’s annual Stock Assessment and Fishery Evaluation (SAFE) reports. The NPFMC and NMFS have a long history of restricting fishing operations in order to protect endangered and threatened species of marine mammals and birds. Numerous objectives outlined in the GOA and BSAI FMPs speak directly to the conservation of aquatic habitats and ecosystems and the protection of endangered species including:</p> <ul style="list-style-type: none"> <li>12. Continue to protect the integrity of the food web through limits on harvest of forage species.</li> <li>13. Incorporate ecosystem-based considerations into fishery management decisions, as appropriate.</li> <li>14. Continue and improve current incidental catch and bycatch management program.</li> <li>20. Control the bycatch of prohibited species through prohibited species catch limits or other appropriate measures.</li> <li>23. Continue to cooperate with U.S. Fish and Wildlife Service (USFWS) to protect ESA-listed species, and if appropriate and practicable, other seabird species.</li> <li>24. Maintain or adjust current protection measures as appropriate to avoid jeopardy of extinction or adverse modification to critical habitat for ESA-listed Steller sea lions.</li> <li>25. Encourage programs to review status of endangered or threatened marine mammal stocks and fishing interactions and develop fishery management measures as appropriate.</li> <li>26. Continue to cooperate with NMFS and USFWS to protect ESA-listed marine mammal species, and if appropriate and practicable, other marine mammal species.</li> <li>27. Review and evaluate efficacy of existing habitat protection measures for managed species.</li> <li>28. Identify and designate essential fish habitat and habitat areas of particular concern pursuant to Magnuson-Stevens Act rules, and mitigate fishery impacts as necessary and practicable to continue the sustainability of managed species.</li> </ul>			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

**Supporting Clause 3.2.5**

There shall be management objectives seeking to avoid, minimize or mitigate impacts of the unit of certification on essential habitats for the stock under consideration and on habitats that are highly vulnerable to damage by the fishing gear of the unit of certification.

FAO ECO (2011) 41.3

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
<p><b>Summary Evidence:</b>                  Management objectives seek to avoid, minimize or mitigate impacts of the sablefish fishery on essential habitats for the sablefish stock and on habitats likely to be highly vulnerable to damage from longlines. Being static fishing gears, bottom set longlines and pots as used in the directed sablefish fishery are likely to have greatly reduced ecosystem impacts when compared with demersal trawls. <a href="#">Management objectives contained in GOA and BSAI Groundfish FMPs are not gear specific and apply equally to mobile and static gears.</a></p>			
<p><b>Evidence:</b>                  The conservation of Essential Fish Habitat (EFH) and other habitats highly vulnerable to impacts from bottom contact fishing gears known as Habitat Areas of Particular Concern (HAPC) is an integral part of NPFMC’s management process as required under the MSA<sup>87,88,89</sup>. These concerns and decisions are summarized in the Ecosystems Considerations chapter of the NPFMC’s annual Stock Assessment and Fishery Evaluation (SAFE) reports. The EFH provisions in each FMP must be reviewed, and if appropriate, revised, every 5 years.</p> <p>Numerous objectives outlined in the GOA and BSAI FMPs speak directly to the need to avoid, minimize or mitigate the impacts of the commercial fishing on vulnerable habitats and those habitats that play a vital role in the life cycle of fish species particularly;</p> <ul style="list-style-type: none"> <li>27. Review and evaluate efficacy of existing habitat protection measures for managed species.</li> <li>28. Identify and designate essential fish habitat and habitat areas of particular concern pursuant to Magnuson-Stevens Act rules, and mitigate fishery impacts as necessary and practicable to continue the sustainability of managed species.</li> <li>29. Develop a Marine Protected Area policy in coordination with national and state policies.</li> <li>30. Encourage development of a research program to identify regional baseline habitat information and mapping, subject to funding and staff availability.</li> <li>31. Develop goals, objectives and criteria to evaluate the efficacy and suitable design of marine protected areas and no-take marine reserves as tools to maintain abundance, diversity, and productivity. Implement marine protected areas if and where appropriate.</li> </ul> <p>In addition the value and importance of certain habitats to ETP species is explicitly considered by management as can be seen from objective 24 directly advocating the protection of habitat essential to Stellar sea lions:</p> <ul style="list-style-type: none"> <li>24. Maintain or adjust current protection measures as appropriate to avoid jeopardy of extinction or adverse modification to critical habitat for ESA-listed Steller sea lions.</li> </ul>			

<sup>87</sup> <https://alaskafisheries.noaa.gov/habitat/efh>

<sup>88</sup> <https://alaskafisheries.noaa.gov/habitat/hapc>

<sup>89</sup> [https://alaskafisheries.noaa.gov/sites/default/files/hapc\\_ak.pdf](https://alaskafisheries.noaa.gov/sites/default/files/hapc_ak.pdf)

The MSA defines EFH as; *“those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity”*. NMFS and the NPFMC must describe and identify EFH in fishery management plans (FMPs), minimize to the extent practicable the adverse effects of fishing on EFH, and identify other actions to encourage the conservation and enhancement of EFH. Federal agencies that authorize, fund, or undertake actions that may adversely affect EFH must consult with NMFS, and NMFS must provide conservation recommendations to federal and state agencies regarding actions that would adversely affect EFH.

Habitat Areas of Particular Concern (HAPCs) are specific sites within EFH that are of particular ecological importance to the long-term sustainability of managed species, are of a rare type, or are especially susceptible to degradation or development. HAPCs are meant to provide for greater focus of conservation and management efforts and may require additional protection from adverse effects. In order to protect HAPCs, certain habitat protection areas and habitat conservation zones have been designated. A habitat protection area is an area of special, rare habitat features where fishing activities that may adversely affect the habitat are restricted. A habitat conservation zone is a subset of a habitat protection area which additional restrictions are imposed on fishing beyond those established for the conservation area, in order to protect specific habitat features. Habitat protection areas and habitat conservation zones currently in place in Alaskan waters can be seen on the NPFMC website<sup>90</sup>.

Fishing with bottom contact gear is permanently restricted in large areas of the North Pacific to reduce potential adverse impacts on sensitive habitats with MPAs comprising a relatively large portion of the continental shelf. These MPAs although not specifically designed with sablefish in mind should also provide supplementary benefits to sablefish. An example of one such conservation area is the Bristol Bay red king crab savings area<sup>91</sup> which spatially coincides with important nursery grounds for young sablefish, as such sablefish likely benefit from an area ostensibly closed for the protection of crab. Note the majority of the crab savings area also coincides with the halibut no-take area.

MPAs including Closure Areas (CA), Conservation Zones (CZ), Fishery Closures (FC), Habitat Conservation Areas (HCA), Habitat Protected Areas (HPA), Marine Reserves (MR), National Estuarine Research Reserves (NERR), National Parks (NP), National Wildlife Refuges (NWR), Pot Fishing Closed Areas (PFCA), Steller Sea Lion Protection Areas (SSLPA) and Trawl Gear Restricted Areas (TGRA) may be view in digital form through NOAA's MPA portal<sup>92</sup> or in downloadable form on the NOAA MPA webpage<sup>93</sup>.

<b>References:</b>	
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>

<sup>90</sup> <http://www.npfmc.org/habitat-protections/>

<sup>91</sup> [http://www.npfmc.org/wp-content/PDFdocuments/conservation\\_issues/EFH/EFHDiscPaper411.pdf](http://www.npfmc.org/wp-content/PDFdocuments/conservation_issues/EFH/EFHDiscPaper411.pdf)

<sup>92</sup> <http://marineprotectedareas.noaa.gov/dataanalysis/mpainventory/mpaviewer/>

<sup>93</sup> <http://marineprotectedareas.noaa.gov/dataanalysis/maps/>

**Supporting Clause 3.2.6**

There shall be management objectives that seek to minimize adverse impacts of the unit of certification, including any enhancement activities, on the structure, processes and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible.

FAO ECO (2011) 36.9

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

**Summary Evidence:**

There are management objectives that seek to minimize adverse impacts of the commercial sablefish fishery on the structure, processes and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible. In comparison to demersal trawls, bottom set longlines and pots as used in the directed sablefish fishery, being static in nature, are likely to have greatly reduced adverse impacts on the structure, processes and function of aquatic ecosystems. [Management objectives contained in GOA and BSAI Groundfish FMPs are not gear specific and apply equally to mobile and static gears.](#)

**Evidence:**

Consideration of the adverse impacts of the commercial fisheries on the structure, processes and function of aquatic ecosystems is primarily the remit of the NPFMC and NMFS with management and decisions made in respect of this being summarized in the Ecosystems Considerations chapter of the NPFMC’s annual SAFE reports.

Numerous objectives outlined in the GOA and BSAI FMPs speak directly to the need to minimize adverse impacts of commercial groundfish fisheries on the structure, processes and function of aquatic ecosystems particularly those under the broad policy objectives; Preserve Food Web, Manage Incidental Catch and Reduce Bycatch and Waste, Avoid Impacts to Seabirds and Marine Mammals and Reduce and Avoid Impacts to Habitat.

**Preserve Food Web:**

- 10. Develop indices of ecosystem health as targets for management.
- 11. Improve the procedure to adjust acceptable biological catch levels as necessary to account for uncertainty and ecosystem factors.
- 12. Continue to protect the integrity of the food web through limits on harvest of forage species.
- 13. Incorporate ecosystem-based considerations into fishery management decisions, as appropriate.

**Manage Incidental Catch and Reduce Bycatch and Waste:**

- 14. Continue and improve current incidental catch and bycatch management program.
- 15. Develop incentive programs for bycatch reduction including the development of mechanisms to facilitate the formation of bycatch pools, vessel bycatch allowances, or other bycatch incentive systems.
- 16. Encourage research programs to evaluate current population estimates for non-target species with a view to setting appropriate bycatch limits, as information becomes available.
- 17. Continue program to reduce discards by developing management measures that encourage the use of gear and fishing techniques that reduce bycatch which includes economic discards.
- 18. Continue to manage incidental catch and bycatch through seasonal distribution of total allowable catch and geographical gear restrictions.



- 19. Continue to account for bycatch mortality in total allowable catch accounting and improve the accuracy of mortality assessments for target, prohibited species catch, and noncommercial species.
- 20. Control the bycatch of prohibited species through prohibited species catch limits or other appropriate measures.
- 21. Reduce waste to biologically and socially acceptable levels.
- 22. Continue to improve the retention of groundfish where practicable, through establishment of minimum groundfish retention standards.

**Avoid Impacts to Seabirds and Marine Mammals:**

- 23. Continue to cooperate with U.S. Fish and Wildlife Service (USFWS) to protect ESA-listed species, and if appropriate and practicable, other seabird species.
- 24. Maintain or adjust current protection measures as appropriate to avoid jeopardy of extinction or adverse modification to critical habitat for ESA-listed Steller sea lions.
- 25. Encourage programs to review status of endangered or threatened marine mammal stocks and fishing interactions and develop fishery management measures as appropriate.
- 26. Continue to cooperate with NMFS and USFWS to protect ESA-listed marine mammal species, and if appropriate and practicable, other marine mammal species.

**Reduce and Avoid Impacts to Habitat:**

- 27. Review and evaluate efficacy of existing habitat protection measures for managed species.
- 28. Identify and designate essential fish habitat and habitat areas of particular concern pursuant to Magnuson-Stevens Act rules, and mitigate fishery impacts as necessary and practicable to continue the sustainability of managed species.
- 29. Develop a Marine Protected Area policy in coordination with national and state policies.
- 30. Encourage development of a research program to identify regional baseline habitat information and mapping, subject to funding and staff availability.
- 31. Develop goals, objectives and criteria to evaluate the efficacy and suitable design of marine protected areas and no-take marine reserves as tools to maintain abundance, diversity, and productivity. Implement marine protected areas if and where appropriate.

As discussed above, Alaskan MPAs of various types may be view in NOAAs MPA portal or on the NOAA MPA webpage.

<b>References:</b>	
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>

## Section B: Science and Stock Assessment Activities

### 7.4. Fundamental Clause 4

There shall be effective fishery data (dependent and independent) collection and analysis systems for stock management purposes.

FAO CCRF (1995) 7.1.9/7.4.4/7.4.5/7.4.6/8.4.3/12.4  
 FAO ECO (2009) 29.1-29.3  
 FAO Eco (2011) 36.1, 36.3-36.5, 37.4

<b>No. Supporting clauses/sub-clauses</b>	13
<b>Supporting clauses applicable</b>	10
<b>Supporting clauses not applicable</b>	3
<b>Non Conformances</b>	

#### Supporting Clause 4.1

All fishery removals and mortality of the target stock(s) shall be considered by management. Specifically, reliable and accurate data required for assessing the status of fisheries and ecosystems - including data on retained catch, bycatch, discards and waste shall be collected. Data can include relevant traditional, fisher or community knowledge, provided their validity can objectively be verified. These data shall be collected, at an appropriate time and level of aggregation, by relevant management organizations connected with the fishery, and provided to relevant States and sub-regional, regional and global fisheries organizations.

FAO CCRF (1995) 7.3.1, 7.4.6, 7.4.7, 12.4  
 FAO Eco (2009) 29.1-29.3  
 FAO Eco (2011) 36.1, 36.3, 36.4

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> All fishery removals and mortality of sablefish are considered in the assessment and management of the stock. Reliable and accurate data are provided annually to assess the status of sablefish fisheries and ecosystems. These data including information on retained catch in the directed longline and pot fisheries, by-catch in trawl fisheries, and catches in the Alaskan state-managed fisheries (inside 3 n. mi.), including subsistence fisheries. Several data reporting systems are in place to ensure timely and accurate collection and reporting of catch data.				
<b>Evidence:</b> Commercial fishery catch data are collected from fixed gear (longline and pot) vessels, which target sablefish in the IFQ fishery, plus trawl fisheries that retain bycatch of sablefish in other fisheries such as those for rockfish and sole. NMFS tracks in-season catches and IFQ balances. TACs in the GOA are nearly fully utilized while TACs in the BS and AI are rarely fully utilized. Catch reports for sablefish in 2015 and earlier years can be found on the NMFS Alaskan fisheries website <sup>94</sup> . Sablefish catch data for each area in the state-managed fisheries can				

<sup>94</sup> <https://alaskafisheries.noaa.gov/fisheries-catch-landings?tid=287>

be found on the ADF&G commercial fisheries website<sup>95</sup>. Sablefish discards by target fisheries are available for hook-and-line gear and other gear combined in Hanselman et al. (2015).

The “eLandings” system<sup>96</sup> is an electronic fish ticket system, for all catch data required to be reported in regulation, including IFQ/CDQ sablefish and halibut. In 2005, NMFS, ADF&G, and the IPHC implemented this interagency electronic reporting system to reduce reporting redundancy and consolidate fishery landing. Vessels in Federal or state fisheries report groundfish landing and production through the web-based e-landings interface. Each industry report submitted via eLandings is checked by NMFS and entered along with observer data into the catch accounting system (CAS) maintained by NMFS. Data from the eLandings are made available to the three collaborating agencies. When fish are landed, a representative of the processor submits the landing report into eLandings and a paper “fish ticket” is printed for both the processor and the vessel representative to sign. Landing reports are mandatory for all processors required to have a Federal processing permit. Landing reports include the fishing start date, the delivery date, gear type, area fished, a breakdown of the weight and condition of each species delivered, and weights of any species that were discarded at the plant before processing.

Delivering vessels are required to report at-sea discards to the processing facility, but these data are not verified, and so NMFS does not use these landing reports to estimate at-sea discard rates. Logbook data are available to observers on board fishing vessels, but are typically not used in the catch estimation procedure. Estimates of sablefish bycatch (landings and discards) in the directed halibut longline fisheries are available and incorporated into stock assessments (Hanselman et al. 2015, Tribuzio et al. 2011))

The CAS combines observer and industry information such as e-landings to create estimates of total catch. The CAS procedures have recently changed to complement the sampling procedures established under the restructured observer program. Recreational removals are not reports to CAS, but relatively minor for sablefish, and estimates of total removals from all activities (e.g. recreational, subsistence, research) other than the directed fishery has ranged from about 1.5 to 2.5 percent of the recommended ABC annually. Additional details on the catch reporting and estimation processes can be found in Cahalan et al. 2014, and more information on commercial sablefish catches is in Hanselman et al. 2015.

By-catches in the directed sablefish fishery are recorded by observers, reported through the CAS, and presented in the annual stock assessments. Main by-catch species in sablefish longline and pot fisheries include grenadier, halibut, rockfish, sharks, and flatfish. More information on bycatch species is contained in Clause 12.4.

Hanselman et al (2015) note that removals from the sport fishery are relatively minor for sablefish but have been increasing in recent years, primarily in state-managed waters. Total removals from activities other than the directed fishery have been between 239 and 359 t since 2006, and are documented in the SAFE but not included in the stock assessment model. These catch estimates equate to approximately 2% of the recommended ABC and are considered to represent a relatively low risk to the sablefish stock.

<b>References:</b>	Cahalan, J., J. Gasper, and J. Mondragon. 2014. Catch sampling and estimation in the federal groundfish fisheries off Alaska, 2015 edition. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-286, 46 p.
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<sup>95</sup> <http://www.adfg.alaska.gov/index.cfm?adfg=fishingcommercialbyarea.main>

<sup>96</sup> <https://elandings.alaska.gov/>

	<p>Hanselman, D.H., C. Lunsford, and C. Rodgveller. 2015. Assessment of the sablefish stock in Alaska. Stock Assessment and Fishery Evaluation Reports for the Groundfish Resources of the Bering Sea/Aleutian Islands and Gulf of Alaska Regions. North Pacific Fishery Management Council, Anchorage, AK 99501. p. 297-414.</p> <p>Tribuzio, C.A., S. Gaichas, J. Gasper, H. Gilroy, T. Kong, O. Ormseth, J. Cahalan, J. DiCosimo, M. Furuness, H. Shen, and K. Green. 2011. Methods for the estimation of non-target species catch in the unobserved halibut IFQ fleet. August Plan Team document. Presented to the Joint Plan Teams of the NPFMC.</p>
<p><b>Non-Conformance Number (if relevant)</b></p>	<p><b>NA</b></p>

**Supporting Clause 4.1.1**

Timely, complete and reliable statistics shall be compiled on catch and fishing effort and maintained in accordance with applicable international standards and practices and in sufficient detail to allow sound statistical analysis for stock assessment. Such data shall be updated regularly and verified through an appropriate system. The use of research results as a basis for the setting of management objectives, reference points and performance criteria, as well as for ensuring adequate linkage, between applied research and fisheries management (e.g. adoption of scientific advice) shall be promoted. Results of analysis shall be distributed accordingly as a contribution to fisheries conservation, management and development.

FAO CCRF (1995) 7.4.4, 12.3, 12.13

FAO Eco (2009) 29.1, 29.3

FAO Eco (2011) 36.3, 36.5

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:** Timely and reliable statistics are compiled on sablefish for all catch and fishing effort, and federal and state agencies maintain databases of these catches. The data also includes other sources of catch information such as by-catch, sport fishing, and personal use. Databases are updated regularly, verified, and feed into the annual peer-reviewed stock assessments. The catch data are also used for other scientific and management purposes related to sablefish conservation and management, are published in annual SAFE reports, and are available on the federal and state websites.

**Evidence:** As documented in the previous section, landings of sablefish from the directed fishery are recorded through the use of commercial fish tickets, reported to NMFS annually, and are fully categorized by gear and regulatory area. Landings are known to occur from the late 1800's onward, but were more limited prior to 1958, averaging about 1700 tons in the three decades before then (Hanselman et al. 2015). Catch data from 1960 onward are used in the recent stock assessments, and include substantial non-USA (Japan, USSR) catches through the 1970's (Low et al. 1976).

In addition to the commercial landings, time series of estimates exist for the other categories of sablefish catch, including by-catch/discards, recreational fishing, and subsistence. These are updated on a regular basis and all are accounted for and reported in the assessment and management of the resource (Hanselman et al. 2015). ADF&G maintains databases on subsistence fishing in state waters. Annual catch reports on sablefish from the NMFS database, dating back to at least 1995, and can be found on an NOAA/NMFS website<sup>97</sup>.

The Alaska Fisheries Information Network (AKFIN) was established in 1997 in response to an increased need for detailed, organized fishery information to aid decision-making by managers with the aims of consolidating, managing and dispensing information related to commercial fishing in Alaska<sup>98</sup>. The AFKIN maintains an analytic database of both state and federal commercial fisheries data for which is Alaska relevant to the needs of fisheries scientists and other users, and provides that data in usable formats.

Extensive research related to stock assessment and management of sablefish is conducted by NMFS, and results are presented and published annually in the NPFMC SAFE reports for BSAI and GOA stocks. These

<sup>97</sup> <https://alaskafisheries.noaa.gov/fisheries-catch-landings?tid=287>.

<sup>98</sup> <http://www.akfin.org/about-akfin>

<p>annual reports are available on line at NPFMC (e.g. see Hanselman et al. 2015)<sup>99</sup>. In addition, ADF&amp;G does research and stock assessment on the sablefish and other resources under state management<sup>100</sup>.</p>	
<p><b>References:</b></p>	<p>Hanselman, D.H., C. Lunsford, and C. Rodgveller. 2015. Assessment of the sablefish stock in Alaska. Stock Assessment and Fishery Evaluation Reports for the Groundfish Resources of the Bering Sea/Aleutian Islands and Gulf of Alaska Regions. North Pacific Fishery Management Council, Anchorage, AK 99501. p. 297-414.</p> <p>Low, L. L., G. K. Tanonaka, and H. H. Shippen. 1976. Sablefish of the Northeastern Pacific Ocean and Bering Sea. Northwest Fisheries Science Center Processed Report. 115 p.</p>
<p><b>Non-Conformance Number (if relevant)</b></p>	
<p><b>NA</b></p>	

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<sup>99</sup> <http://www.afsc.noaa.gov/REFM/Docs/2015/BSAIsablefish.pdf>

<sup>100</sup> [http://www.psmfc.org/tsc-drafts/2015/2014\\_AK\\_TSC\\_ALaska\\_draftfinal.pdf](http://www.psmfc.org/tsc-drafts/2015/2014_AK_TSC_ALaska_draftfinal.pdf)

**Supporting Clause 4.1.2**

In the absence of specific information on the “stock under consideration”, generic evidence based on similar stocks can be used for fisheries with low risk to that “stock under consideration”. However, the greater the risk of overfishing, the more specific evidence is necessary to ascertain the sustainability of intensive fisheries.

FAO Eco (2009) 30.4

FAO ECO (2011) 37.4

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<p><b>Summary Evidence:</b> All management decisions are made using stock specific information, and there is some evidence of two populations of sablefish along the Pacific coast. The stock is assessed as one unit along its distribution in Alaskan waters, and is managed in six regions in federal waters of Alaska to distribute exploitation throughout the geographical range.</p> <p><b>Evidence:</b> Stock assessment scientists have long felt that eastern North Pacific sablefish form two populations based on differences in growth rate, size at maturity, and tagging studies. These two populations consist of a northern one inhabiting Alaska and northern British Columbia (BC) waters and a southern one which inhabits southern BC, Washington, Oregon, and California waters, with mixing of the two populations occurring off southwest Vancouver Island and northwest Washington (see Section 3.1 above for a complete description of the analyses of population structure). Despite mixing of sablefish being potentially sufficient for them to be considered one biological population, short term migration rates will be small and justify the separation of these populations for fishery management purposes (Kimura et al., 1998).</p> <p>Sablefish are assessed as a single population in Federal waters off Alaska and are managed in six discrete regions to distribute exploitation throughout their wide geographical range. For the five sablefish fisheries under state management, individual stock assessments or GHs are used to determine annual harvest levels, taking into account removals from all sources<sup>101</sup>. In some cases, these catch levels are tied to the harvest rates and reference points in the adjacent federal waters. Management and regulatory decisions, such as catch limits, seasons, and restrictions, are implemented at the regulatory area level.</p> <p>Hanselman et al. (2015a) notes that the federal assessment includes catches from minor State-managed fisheries in the northern GOA and in the AI region because fish caught in these State waters are reported using the area code of the adjacent Federal waters. The effect of including these State waters catches in the assessment is to overestimate biomass by about 1%, considered to be a negligible error compared to statistical variation in other data used in this assessment. Catches from state areas that conduct their own assessments and set GHs (e.g., Prince William Sound, Chatham Strait, and Clarence Strait), are not included in the federal assessment.</p>				
<b>References:</b>	<p>Hanselman, D.H., C. Lunsford, and C. Rodgveller. 2015. Assessment of the sablefish stock in Alaska. Stock Assessment and Fishery Evaluation Reports for the Groundfish Resources of the Bering Sea/Aleutian Islands and Gulf of Alaska Regions. North Pacific Fishery Management Council, Anchorage, AK 99501. p. 297-414.</p>			

<sup>101</sup> <http://www.adfg.alaska.gov/static/applications/dcfnewsrelease/653580675.pdf>

	<p>Hanselman, D.H., J. Heifetz, K.B. Echave, and S.C. Dressel. 2015b. Move it or lose it: Movement and mortality of sablefish tagged in Alaska. Canadian Journal of Fish and Aquatic Sciences. 2015, 72(2): 238-251.</p> <p>Kimura, D.K, A.M. Shimada, and F.R. Shaw. 1998. Stock structure and movements of tagged sablefish, <i>Anoplopoma fimbria</i>, in offshore northeast Pacific waters and the effects of El Nino–southern oscillation on migration and growth. Fish. Bull. 96: 462-481.</p>
<p><b>Non-Conformance Number (if relevant)</b></p>	<p><b>NA</b></p>



**Supporting Clause 4.2**

An observer scheme designed to collect accurate data for research and support compliance with applicable fishery management measures shall be established.

FAO CCRF (1995) 8.4.3  
 FAO Eco (2009) 29.2b

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

**Summary Evidence:**

An extensive industry-funded on-board observer program exists in Alaskan waters to cover various fisheries, including sablefish. Amendments to the program were introduced in 2013 to increase the statistical reliability of data collected by the program, address cost inequality among fishery participants, and expand observer coverage to previously unobserved fisheries (e.g. some vessels less than 60 feet). Electronic monitoring is being introduced to the Observer Program. Vessels under 40 feet are excluded from observer coverage at present, but this fleet segment does not take a large proportion of the sablefish catch. Data from the observer program is used extensively in the stock assessments.

**Evidence:**

Beginning January 1, 2013, amendment 86 (BSAI) and amendment 76 (GOA) were added to the Federal Fisheries Regulations 50 CFR Part 679: Fisheries of the Exclusive Economic Zone Off Alaska. In compliance with the MSA, these amendments restructured the funding and deployment system for observers in the North Pacific groundfish and halibut fisheries and include some vessels less than 60 ft. in length. Under the restructured Observer Program, coverage was expanded to reduce the proportion of trips that do not have any coverage. Compared with the previous program, discard estimates can be made using observer information that better represents the fishing activities across the fishing fleet in federal waters<sup>102</sup>. The restructured Observer Program results in better spatial and temporal distribution of observer coverage across all fisheries, except for vessels less than 40 ft LOA. Details on the amended program can be found in Faunce (2013)<sup>103</sup>. Details on the sampling program carried out by the observers, including collection of biological data on sablefish, are extensive and available in NMFS/AFSC publications<sup>104</sup>.

Longline vessels fishing for sablefish and halibut are registered with the NMFS and can be selected on a vessel or trip basis, under the Observer Declare and Deploy System (ODDS), administered by the Fisheries Monitoring and Analysis Division of NMFS at AFSC. The program is covered by fees assessed on landings from both the CDQ and IFQ fisheries. Each year NMFS presents its observer deployment plan at the October and December meetings of NPFMC. Detailed information on the observer program can be found in the NOAA/NMFS North Pacific Groundfish and Halibut Observer Program Annual Reports, (e.g. NMFS 2015a<sup>105</sup>).

The NPFMC has established an intention to integrate electronic monitoring (EM) into the Observer Program for the fixed gear small-boat groundfish and halibut fisheries, so that EM may be used to collect data to be used in catch estimation (retained and discarded) for this fleet. The NPFMC has set an interim goal of pre-implementation in the small boat (40-57.5 feet length overall) longline fleet in 2016, focusing on vessels that

<sup>102</sup> [https://alaskafisheries.noaa.gov/sites/default/files/analyses/finalea\\_restructuring0915.pdf](https://alaskafisheries.noaa.gov/sites/default/files/analyses/finalea_restructuring0915.pdf)

<sup>103</sup> <http://www.afsc.noaa.gov/Quarterly/ifm2013/JFM2013-Feature.pdf>

<sup>104</sup> [http://www.afsc.noaa.gov/FMA/Manual\\_pages/MANUAL\\_pdfs/manual2015.pdf](http://www.afsc.noaa.gov/FMA/Manual_pages/MANUAL_pdfs/manual2015.pdf)

<sup>105</sup> <https://alaskafisheries.noaa.gov/sustainablefisheries/observers/annualrpt2014.pdf>

have trouble carrying an observer due to various limitations. A fixed gear EM Workgroup (EMWG) provides a forum for all stakeholders, including the commercial fishing industry, agencies, and EM service providers, to cooperatively and collaboratively design, test, and develop EM systems, consistent with NPFMC’s goal to integrate EM into the Observer Program. A document describing the EM pre-implementation plan for 2016 exists, and also noting other EM research and development that is scheduled to take place in 2016 is available on the NPFMC website<sup>106</sup>

No observer coverage in 2016 was scheduled (i.e. vessels were in the “no-selection pool”) for catcher vessels less than 40 ft LOA as well as fixed gear vessels that have opted-into the EM selection pool. For 2016, 58 fixed-gear vessels in the size range 40-57.5 ft LOA will participate in the EM selection pool and will carry EM systems as described in the EM Plan. The Observer Program Annual Report (NMFS 2015a) and the Observer Program Supplement Environmental Assessment (NMFS 2015b) have highlighted the data gaps caused by not having any observer information on vessels less than 40 ft LOA. NMFS recommended in its 2016 Deployment Plan<sup>107</sup> that vessels less than 40 ft LOA be considered for electronic monitoring in the future, and there are plans to partially implement EM in this sector in 2017. For sablefish, based on data from AKFIN/NMFS/AFSC, only about 2.3% of the catch in 2014 and 2015 was taken by vessels < 40’ LOA, so lack of observer coverage in this fishery sector does not pose a large risk.

<b>References:</b>	<p>AFSC. 2015. 2015 Observer Sampling Manual. Fisheries Monitoring and Analysis Division, North Pacific Groundfish Observer Program. AFSC, 7600 Sand Point Way N.E., Seattle, Washington, 98115.</p> <p>Faunce, C.H. 2013. The Restructured North Pacific Groundfish and Halibut Observer Program. NOAA quarterly publication.</p> <p>NMFS 2015a. North Pacific Groundfish and Halibut Observer Program 2014 Annual Report. National Oceanic and Atmospheric Administration, 709 West 9th Street. Juneau, Alaska 99802.</p> <p>NMFS. 2015b. Final Supplement to the Environmental Assessment For Restructuring the Program for Observer Procurement and Deployment in the North Pacific. NMFS, Alaska Regional Office, Juneau. September, 2015.</p>
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<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>
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<sup>106</sup>[http://www.npfmc.org/wp-content/PDFdocuments/conservation\\_issues/Observer/EM/2016EMpre-impPlanFinal0116.pdf](http://www.npfmc.org/wp-content/PDFdocuments/conservation_issues/Observer/EM/2016EMpre-impPlanFinal0116.pdf)

<sup>107</sup> <https://alaskafisheries.noaa.gov/sites/default/files/final2016adp.pdf>

**Supporting Clause 4.3**

Sub-regional or regional fisheries management organizations or arrangements shall compile data and make them available, in a manner consistent with any applicable confidentiality requirements, in a timely manner and in an agreed format to all members of these organizations and other interested parties in accordance with agreed procedures.

FAO CCRF (1995) 7.4.6/7.4.7

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> Data collected from surveys and fisheries are analyzed and presented in peer reviewed meetings and/or in primary literature, following rigorous scientific protocols. Data are widely available on websites and results of analyses are disseminated in a timely fashion through numerous methods, including scientific publications, and as information on the various websites, in order to contribute to fisheries conservation and management. Confidentiality of commercial fishery information is fully respected where necessary.				
<b>Evidence:</b> NMFS and ADF&G have extensive scientific databases which include sablefish. NPFMC has substantial information on management of sablefish in Alaskan waters. These data are made widely available through the agency websites, publications and at various publically-attended meetings. Data on certain aspects of commercial fishing are confidential, such as individuals or individual vessels in the analysis of fishery CPUE data, depending on the number of individuals or entities involved (e.g. if less than 3 vessels, results not shown in CPUE analyses – Hanselman et al. 2015). The Commercial Fisheries Entry Commission <sup>108</sup> is the designated records manager for ADF&G fish ticket records. Fish ticket records are retained by the Commission for 45 years, and are confidential as defined by AS 16.05.815 and 16.40.155.				
<b>References:</b>	Hanselman, D.H., C. Lunsford, and C. Rodgveller. 2015. Assessment of the sablefish stock in Alaska. Stock Assessment and Fishery Evaluation Reports for the Groundfish Resources of the Bering Sea/Aleutian Islands and Gulf of Alaska Regions. North Pacific Fishery Management Council, Anchorage, AK 99501. p. 297-414.			
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

<sup>108</sup> <https://www.cfec.state.ak.us/>

**Supporting Clause 4.4**

States shall stimulate the research required to support national policies related to fish as food.

FAO CCRF (1995) 12.7

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> Alaska supports both a Seafood Marketing Institute and the Kodiak Seafood and Marine Science Center to stimulate research and to support and distribute the benefits of seafood in human diets.				
<b>Evidence:</b> State and national policies regarding seafood are guided by the Alaska Seafood Marketing Institute (ASMI), U.S. Food and Drug Administration (FDA), U.S. Department of Agriculture (USDA), and the U.S. National Institute of Health (NIH). ASMI <sup>109</sup> is a public-private partnership between the State of Alaska and the Alaska seafood industry established to foster economic development of a renewable natural resource through marketing programs, quality assurance, industry training and sustainability certification.  Through the University of Alaska Fairbanks, the state of Alaska also operates the Kodiak Seafood and Marine Science Center (KSMSC) <sup>110</sup> , which directs efforts in several fields, including seafood processing technology, and seafood quality and safety. KSMSC staff work closely with the fishing industry to convey research results and provide educational opportunities that help seafood workers improve efficiency and the quality of their products.				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

<sup>109</sup> <http://www.alaskaseafood.org>

<sup>110</sup> <https://www.uaf.edu/sfos/about-us/locations/kodiak/about-ksmsc/>

**Supporting Clause 4.5**

States shall ensure that a sufficient knowledge of the economic, social, marketing and institutional aspects of fisheries is collected through data gathering, analysis and research and that comparable data are generated for ongoing monitoring, analysis and policy formulation.

FAO CCRF (1995) 7.4.5, 12.9

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b>				
<p>Economic and social data are collected and analyzed by various organizations, such as NMFS, NPFMC, and ADF&amp;G. An extensive report from NMFS/AFSC is produced each year providing data and analysis on a number of socioeconomic factors in Alaskan fisheries, including catch volumes and values, numbers of vessels, employment, and marketing. These data, along with analyses conducted by/for NPFMC and ADF&amp;G, are adequate for ongoing monitoring, analysis and policy formulation for the sablefish fisheries.</p>				
<b>Evidence:</b>				
<p>Socio-economic data collection and economic analyses are required to varying degrees under the Regulatory Flexibility Act (RFA), the MSA, the NEPA, the Endangered Species Act, and other applicable laws. AFSC’s Economic and Social Sciences Research Program produces an annual Economic Status Report of the Groundfish fisheries in Alaska (Fissel et al. 2015). This comprehensive report provides estimates of total groundfish catch, groundfish discards and discard rates, prohibited species catch (PSC) and PSC rates, values of catch and resulting food products, the number and sizes of vessels that participated in the groundfish fisheries off Alaska, and employment on at-sea processors. These reports contain a wide range of analyses and information on the performance of numerous indices for different sectors of the North Pacific fisheries, including sablefish, and relate changes in value, price, and quantity, across species, product and gear types, to changes in the market.</p> <p>Agencies such as NPFMC are required to consider the impact of their rules (e.g. Fishery Management Plans<sup>111</sup>, Fishing Regulations) on small entities (fishermen communities) and to evaluate alternatives that would accomplish the objectives of the rules without unduly burdening small entities when the rules impose a significant economic impact on them. This NPFMC approach explicitly recognizes the need to balance competing uses of marine resources and different social and economic goals for sustainable fishery management.</p> <p>A report prepared by the McDowell Group in 2015 for ASMI quantifies the regional, state-wide, and national economic impacts of Alaska’s seafood industry. This report<sup>112</sup> summarizes overall industry participation, value, and exports. It also highlights the significant impact the industry has on tax revenues and lowering the cost of living in Alaska.</p>				
<b>References:</b>	<p>Fissel, B., M. Dalton, R. Felthoven, B. Garber-Yonts, A. Haynie, A. Himes-Cornell, S. Kasperski, J. Lee, D. Lew, C. Seung. 2015. Stock Assessment and Fishery Evaluation</p>			

<sup>111</sup> <http://www.npfmc.org/wp-content/PDFdocuments/fmp/GOA/GOAfmfp.pdf>

<sup>112</sup> [http://ebooks.alaskaseafood.org/ASMI\\_Seafood\\_Impacts\\_Dec2015/#/0/](http://ebooks.alaskaseafood.org/ASMI_Seafood_Impacts_Dec2015/#/0/)

	<p>Report for the Groundfish Fisheries of the Gulf of Alaska and Bering Sea/Aleutian Island Area: Economic Status of the Groundfish Fisheries off Alaska, 2014.</p> <p>McDowell Group. 2015. The economic value of Alaska’s seafood industry. 3960 Glacier Hwy. Suite 201. Juneau Ak.</p>
<p><b>Non-Conformance Number (if relevant)</b></p>	<p><b>NA</b></p>

**Supporting Clause 4.6**

States shall investigate and document traditional fisheries knowledge and technologies, in particular those applied to small scale fisheries, in order to assess their application to sustainable fisheries conservation, management and development.

FAO CCRF (1995) 12.12

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> All available sablefish data from small and large scale fisheries, including personal use and subsistence, are considered in the stock assessment and management processes. Data from both federal and state-managed fisheries are included.				
<b>Evidence:</b> All data from the state and federally managed sablefish fisheries are included in the stock assessments (Hanselman et al. 2015). As noted in Clause 4.1, there is minimal recreational, personal use, or subsistence fishing for sablefish in Alaskan waters, and all estimates are included in the catch data.				
<b>References:</b>	Hanselman, D.H., C. Lunsford, and C. Rodgveller. 2015. Assessment of the sablefish stock in Alaska. Stock Assessment and Fishery Evaluation Reports for the Groundfish Resources of the Bering Sea/Aleutian Islands and Gulf of Alaska Regions. North Pacific Fishery Management Council, Anchorage, AK 99501. p. 297-414.			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>	

**Supporting Clause 4.7**

States conducting scientific research activities in waters under the jurisdiction of another State shall ensure that their vessels comply with the laws and regulations of that State and international law.

FAO CCRF (1995) 12.14

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> Scientific research carried out in the waters of USA and Canada, the only 2 countries involved in the science and management of this resource, is compliant with all relevant laws and regulations of those jurisdictions.				
<b>Evidence:</b> Data from the annual setline survey conducted by IPHC, using commercial vessels from USA and Canada, are considered in the annual sablefish assessments. In 2015 the survey encompassed both nearshore and offshore waters of southern Oregon, Washington, British Columbia, southeast Alaska, the central and western Gulf of Alaska, Aleutian Islands, and the Bering Sea continental shelf (Henry et al. 2016). Thus only the waters under jurisdiction of USA and Canada were surveyed. Survey activities were compliant with all laws and regulations of those countries, registered commercial halibut vessels were chartered, and all catches in the survey were recorded and reported.  Other scientific surveys used directly, or considered, in the sablefish stock assessments include NMFS annual setline and trawl surveys in GOA and BSAI, surveys by ADF&G in state waters, and a trap survey by DFO (Canada) in British Columbia. None of these surveys cross any international boundaries.				
<b>References:</b>	Henry, E., Soderlund, E., Henry, A. M., Geernaert, T., Ranta, A. M., and Kong, T. 2016. 2015 standardized stock assessment survey. Int. Pac. Halibut Comm. Report of Assessment and Research Activities 2015: 490-529.			
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>



**Supporting Clause 4.8**

States shall promote the adoption of uniform guidelines governing fisheries research conducted on the high seas and shall, where appropriate, support the establishment of mechanisms, including, inter alia, the adoption of uniform guidelines, to facilitate research at the sub-regional or regional level and shall encourage the sharing of such research results with other regions.

FAO CCRF (1995) 12.15, 12.16

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> There is no research on this stock conducted on the high seas. Sharing of sablefish research information (Canada/USA) is accomplished through the stock assessment process.				
<b>Evidence:</b> As this stock of sablefish is not distributed in high seas areas, there is no research conducted in those waters. Results from the stratified random trap surveys conducted in Canadian waters by DFO are available to NMFS scientists and included in the annual SAFE stock assessment reports.				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 4.9**

States and relevant international organizations shall promote and enhance the research capacities of developing countries, inter alia, in the areas of data collection and analysis, information, science and technology, human resource development and provision of research facilities, in order for them to participate effectively in the conservation, management and sustainable use of living aquatic resources.

FAO CCRF (1995) 12.18

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> There are no developing countries involved in the Alaska Sablefish Commercial fishery; as such this Clause is <b>NOT APPLICABLE.</b>				
<b>Evidence:</b> There are no developing countries involved in the Alaska Sablefish Commercial fishery; as such this Clause is <b>NOT APPLICABLE.</b>				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 4.10**

Competent national organizations shall, where appropriate, render technical and financial support to States upon request and when engaged in research investigations aimed at evaluating stocks which have been previously un-fished or very lightly fished.

FAO CCRF (1995) 12.19

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> The Alaska Sablefish Commercial fishery has existed for many decades and is well established; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>Evidence:</b> The Alaska Sablefish Commercial fishery has existed for many decades and is well established; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

**Supporting Clause 4.11**

Relevant technical and financial international organizations shall, upon request, support States in their research efforts, devoting special attention to developing countries, in particular the least developed among them and small island developing countries.

FAO CCRF (1995) 12.20

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> There are no developing countries involved in the Alaska Sablefish Commercial fishery; as such this Clause is <b>NOT APPLICABLE.</b>			
<b>Evidence:</b> There are no developing countries involved in the Alaska Sablefish Commercial fishery; as such this Clause is <b>NOT APPLICABLE.</b>			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

**7.5. Fundamental Clause 5**

There shall be regular stock assessment activities appropriate for the fishery, its range, the species biology and the ecosystem, undertaken in accordance with acknowledged scientific standards to support its optimum utilization.

FAO CCRF (1995) 7.2.1/12.2/12.3/12.5/12.6/12.7/12.17  
 FAO Eco (2009) 29-29.3, 31  
 FAO Eco (2011) 42

<b>No. Supporting clauses/sub-clauses</b>	7
<b>Supporting clauses applicable</b>	7
<b>Supporting clauses not applicable</b>	0
<b>Non-conformances</b>	0

**Supporting Clause 5.1**

An appropriate institutional framework shall be established to determine the applied research which is required and its proper use (i.e. assess/evaluate stock assessment model practices and/or model) for fishery management purposes.

FAO CCRF (1995) 12.2/12.6

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

**Summary Evidence:**

There is a well-established process in place to peer review all appropriate research, stock assessment and management of the sablefish resource in Alaska. This includes review and production of annual SAFE documents, as well as research and assessment of sablefish by ADF&G in state-managed waters.

**Evidence:**

NMFS has a well-established institutional framework for research developed within the Alaska Fisheries Science Center (AFSC). The mission of the AFSC is to plan, develop, and manage scientific research programs which generate the best scientific data available for understanding, managing, and conserving the region's living marine resources and the environmental quality essential for their existence. The AFSC operates several laboratories (e.g. Auke Bay Biological Lab and the National Marine Mammal Lab), and an extensive fisheries monitoring and analysis section (Observers), as well as the Resource Assessment & Conservation Engineering (RACE) and the Resource Ecology Fisheries & Management (REFM) Divisions.

As outlined in the NPFMC FMPs<sup>113</sup>, scientists from the AFSC, ADF&G, other agencies, and universities prepare a Stock Assessment and Fishery Evaluation (SAFE) report annually. The SAFE report consists of three volumes: a volume containing stock assessments, one containing economic analysis, and one describing ecosystem considerations. Chapters of the assessment volume deal with each stock assessment (e.g. for sablefish, see Hanselman et al. 2015). The SAFE report is scientifically based, considers all available research on sablefish, and provides information to NPFMC for determining annual harvest specifications, documenting significant

<sup>113</sup> <http://www.npfmc.org/wp-content/PDFdocuments/fmp/GOA/GOAfm.pdf>

trends or changes in the stocks, marine ecosystem, and fisheries. This document is reviewed first by the NPFMC Groundfish Plan Team, then by the Scientific and Statistical Committee (SSC) and Advisory Panel, and finally by the full Council. The review by the SSC constitutes the official scientific review for purposes of the Information Quality Act. Upon review and acceptance by the SSC, the SAFE report and any associated SSC comments constitute the best scientific information available for purposes of the Magnuson-Stevens Act. NPFMC actively encourages stakeholder participation, and all Council deliberations are conducted in open, public sessions.

ADF&G has a well-developed research capacity and conducts stock assessments in State waters to determine safe harvest levels. In 1988, the department began annual longline research surveys in both Southeast inside sub-districts where the majority of state fleet fishing effort is focused, in order to assess the relative abundance of sablefish over time and differing environmental conditions. Biological data is also collected during the surveys and ADF&G has standardized its survey methods with the NMFS longline survey. These data are presented and reviewed as part of the overall annual sablefish assessment process, and ADF&G scientists participate in the NPFMC Plan Team. The Prince William Sound sablefish fishery is managed using a GHL and derived from the estimated area of sablefish habitat and a yield-per-unit-area model. For the Clarence and Chatham Strait fisheries (Southeast Inside areas) an annual harvest objective is set with regard to survey and fishery catch per unit effort and biological characteristics of the population. In addition, in Chatham Strait an annual stock assessment is performed which includes a mark-recapture estimate of the population abundance<sup>114</sup>. ADF&G arranges public meetings to present and discuss the scientific findings on these sablefish management areas<sup>115</sup>.

<b>References:</b>	Hanselman, D.H., C. Lunsford, and C. Rodgveller. 2015. Assessment of the sablefish stock in Alaska. Stock Assessment and Fishery Evaluation Reports for the Groundfish Resources of the Bering Sea/Aleutian Islands and Gulf of Alaska Regions. North Pacific Fishery Management Council, Anchorage, AK 99501. p. 297-414.
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<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>
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<sup>114</sup> <http://www.adfg.alaska.gov/index.cfm?adfg=sablefish.research>

<sup>115</sup> <http://www.adfg.alaska.gov/static/applications/dcfnewsrelease/638263675.pdf>

**Supporting Clause 5.1.1**

With the use of less elaborate methods for stock assessment frequently used for small scale or low value capture fisheries resulting in greater uncertainty about the state of the stock under consideration, more precautionary approaches to managing fisheries on such resources shall be required, including where appropriate, lower level of utilization of resources. A record of good management performance may be considered as supporting evidence of the adequacy and the management system.

FAO Eco (2011) 42

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> State-managed fisheries for sablefish are at a much smaller scale than the federally managed sablefish resource, but stock assessments are carried out on these components where possible. Where data do not allow elaborate stock assessment methods to be used, management of these state water components is tied to the precautionary approach used in the adjacent federal waters.				
<b>Evidence:</b> In state waters, five sablefish state fisheries are managed by the ADF&G and the BOF outside the IFQ program. Two minor state fisheries are in Cook Inlet and the Aleutian Islands managed using a Guideline Harvest Level (GHL), which is determined based on harvest history, fishery performance, and the federal survey for the area. Three major state fisheries exist which are limited entry and are located in Prince William Sound, Chatham and Clarence Strait. The Prince William Sound sablefish fishery is managed using a GHL and derived from the estimated area of sablefish habitat and a yield-per-unit-area model. For the Clarence and Chatham Strait fisheries an annual harvest objective is set with regard to survey and fishery catch per unit effort and biological characteristics of the population. In addition, in Chatham Strait an annual stock assessment is performed which includes a mark-recapture estimate of the population abundance. More information on the precautionary approach used in managing these fisheries can be found in Clause 6.				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 5.1.2**

States shall ensure that appropriate research is conducted into all aspects of fisheries including biology, ecology, technology, environmental science, economics, social science, aquaculture and nutritional science. Results of analyses shall be distributed in a timely and readily understandable fashion in order that the best scientific evidence is made available as a contribution to fisheries conservation, management and development. States shall also ensure the availability of research facilities and provide appropriate training, staffing and institution building to conduct the research, taking into account the special needs of developing countries.

FAO CCRF (1995) 12.1/7.4.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

Appropriate research is conducted into all aspects of fisheries by NMFS, ADF&G, and researchers from universities and other agencies. A research plan is published in the annual SAFE document, and biology, ecology, stock assessment, and environmental science are all covered by these Plans. Economic analyses and social science are conducted by NMFS/AFSC, and ADF&G. All results of research are available to the public in readily understandable fashion. Thus the best scientific evidence is made readily available as a contribution to fisheries conservation and management. Research facilities and appropriate training are provided at a number of locations in Alaska.

**Evidence:**

Research into sablefish biology, ecology, and environmental science is conducted by NMFS and ADF&G staff, along with several other institutions. NMFS research plans and priorities are listed in the annual sablefish SAFE documents, and in 2015 the topics include evaluating apportionment strategies through management strategy evaluation, effects of whale depredation on survey and fishery indices, exploring the use of environmental data to aid in determining recruitment, and developing a spatially explicit research assessment model that includes movements (Hanselman et al. 2015).

The Bering Sea Project, a partnership between the NPRB and the National Science Foundation, is studying the Bering Sea ecosystem from atmospheric forcing and physical oceanography to humans and communities, as well as socio-economic impacts of a changing marine ecosystem. Scientists and researchers from a number of agencies and universities are involved. Ecosystem modelling, sound data management and education and outreach activities are included in the program<sup>116</sup>. An integrated GOA Ecosystem project, also funded by the NPRB, is examining recruitment processes of major groundfish species including sablefish.

Regarding socio-economic data collection, AFSC Economic and Social Sciences Research Program produces an annual Economic Status Report of the Groundfish fisheries in Alaska. This comprehensive report (Fissel, et. al. 2015) provides estimates of total groundfish catch, groundfish discards and discard rates, prohibited species catch (PSC) and PSC rates, values of catch and resulting food products, the number and sizes of vessels that participated in the groundfish fisheries off Alaska, and employment on at-sea processors. The report contains a wide range of analyses and comments on the performance of a range of indices for different sectors of the North Pacific fisheries, and relates changes in value, price, and quantity, across species,

<sup>116</sup> [http://www.nprb.org/assets/images/uploads/01.10\\_bsag\\_web.pdf](http://www.nprb.org/assets/images/uploads/01.10_bsag_web.pdf).



product and gear types, to changes in the market. This report includes a considerable amount of economic data for the commercial sablefish fishery<sup>117</sup>.

Various studies have been conducted on the economic value of sportfishing in Alaska (Lew et al. 2015), which include sablefish, although sablefish is not a major target species for sport fishing. The Alaska Seafood Marketing Institute has contracted studies to determine the value of Alaska’s seafood industry, and the University of Alaska Institute of Social and Economic Research conducts research on the economics of various Alaskan fisheries.

The University of Alaska<sup>118</sup> provides bachelor, masters and doctoral programs in fisheries science, associate degrees and certificates in fisheries technology. University faculty supervise graduate student research on a broad array of biological topics including quantitative stock assessment, biology and ecology of marine and freshwater species, molecular genetics, and behavioral ecology. Facilities are located in Juneau, Seward, Kodiak and Fairbanks. The University of Alaska Fairbanks Kodiak Seafood and Marine Science Center<sup>119</sup> promotes the sustainable use of Alaska fisheries through collaborative research, application, education and information transfer. The areas of focus include seafood safety and quality, product markets and development, and bycatch reduction and environmental concerns.

<b>References:</b>	<p>Hanselman, D.H., C. Lunsford, and C. Rodgveller. 2015. Assessment of the sablefish stock in Alaska. Stock Assessment and Fishery Evaluation Reports for the Groundfish Resources of the Bering Sea/Aleutian Islands and Gulf of Alaska Regions. North Pacific Fishery Management Council, Anchorage, AK 99501. p. 297-414.</p> <p>Fissel, B., M. Dalton, R. Felthoven, B. Garber-Yonts, A. Haynie, A. Himes-Cornell, S. Kasperski, J. Lee, D. Lew, C. Seung. 2015. Stock Assessment and Fishery Evaluation Report for the Groundfish Fisheries of the Gulf of Alaska and Bering Sea/Aleutian Island Area: Economic Status of the Groundfish Fisheries off Alaska, 2014.</p> <p>Lew, D. K., G. Sampson, A. Himes-Cornell, J. Lee, and B. GarberYonts. 2015. Costs, earnings, and employment in the Alaska saltwater sport fishing charter sector, 2011-2013. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-299, 134 p.</p>
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<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>
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<sup>117</sup> <http://www.afsc.noaa.gov/refm/docs/2015/economic.pdf>.

<sup>118</sup> <https://www.uaf.edu/sfos/research/fisheries/>

<sup>119</sup> <http://www.uaf.edu/sfos/about-us/locations/kodiak/about-ksmsc/>

**Supporting Clause 5.2**

There shall be established research capacity necessary to assess and monitor 1) the effects of climate or environment change on fish stocks and aquatic ecosystems, 2) the state of the stock under State jurisdiction, and for 3) the impacts of ecosystem changes resulting from fishing pressure, pollution or habitat alteration.

FAO CCRF (1995) 12.5

FAO Eco (2009) 31

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

The National Marine Fisheries Service, Alaska Department of Fish and Game and University of Alaska maintain established research programs to monitor the state of the sablefish stocks and effects of fishing, pollution, habitat alteration and climate change.

**Evidence:** NPFMC receives comprehensive presentations on the status of Alaska’s marine ecosystems (Gulf of Alaska and Bering Sea) at its SSC and Advisory Panel meetings (Zador (ed.) 2015), as part of its annual management process for Alaskan groundfish including sablefish. These are prepared and presented by NMFS scientists, and contain report cards which look at a wide range of environmental and ecosystem variables, such as physical and environmental trends, zooplankton biomass, predator and forage species biomass, and seabird and marine mammal data.

As part of IPHC’s annual setline survey, which provides data for the sablefish assessment, IPHC conducts an extensive oceanographic monitoring program which includes waters off British Columbia, and into the Gulf of Alaska, Bering Sea, and Aleutian Islands (Sadorus and Walker 2016). The IPHC is collaborating with the Joint Institute for the Study of the Atmosphere and Ocean (JISAO) at the University of Washington and NOAA’s Pacific Marine Environmental Laboratory to process the oceanographic data and make them publicly accessible. The complete set of data from 2009-2013 is currently available<sup>120</sup>.

Alaska’s sablefish stock assessment programs (NMFS, ADF&G) are extensive and comprehensive. The process to determine the stock removals used in the assessment and management considerations is explained in Clause 4.1. Research capacity in environmental science is also discussed in Clause 5.1.2. The program to determine reference points and evaluate the stock against these in a precautionary approach is described in Clauses 6.1, 6.2 and 6.3.

The North Pacific Research Board (NPRB) has developed two special projects that seek to understand the integrated ecosystems of the BSAI and GOA. For example, in the Gulf of Alaska Integrated Ecosystem Research Program, more than 40 scientists from 11 institutions are taking part in the \$17.6 million GOA ecosystem study that looks at the physical and biological mechanisms that determine the survival of juvenile groundfish in the eastern and western Gulf of Alaska<sup>121</sup>.

NOAA identifies habitats essential for managed species and conserves habitats from adverse effects on those habitats. These habitats are termed “Essential Fish Habitat” or EFH, and are defined as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity”. NMFS and NPFMC must

<sup>120</sup> [http://www.ecofoci.noaa.gov/projects/IPHC/efoci\\_IPHCData.shtml](http://www.ecofoci.noaa.gov/projects/IPHC/efoci_IPHCData.shtml)

<sup>121</sup> <http://www.nprb.org/gulf-of-alaska-project>

describe and identify EFH in fishery management plans (FMPs), minimize to the extent practicable the adverse effects of fishing on EFH, and identify other actions to encourage the conservation and enhancement of EFH<sup>122</sup>. Federal agencies that authorize, fund, or undertake actions that may adversely affect EFH must consult with NMFS, and NMFS must provide conservation recommendations to federal and state agencies regarding actions that would adversely affect EFH. The NOAA EFH Research Implementation Plan for Alaska (Sigler et al. 2012) is intended to guide research to meet EFH mandates in Alaska during the next several years.

A species-specific ecosystem consideration (SEC) is planned to be introduced into the NPFMC process in the near future. The SECs will be in the SAFE documents and should include updated species profiles, climate vulnerability analyses, and stock/habitat prioritization information. The intention is to improve the process of integrating ecosystem information into the stock assessments and facilitate ecosystem based fishery management (Hanselman et al. 2015).

**References:**

Hanselman, D.H., C. Lunsford, and C. Rodgveller. 2015. Assessment of the sablefish stock in Alaska. Stock Assessment and Fishery Evaluation Reports for the Groundfish Resources of the Bering Sea/Aleutian Islands and Gulf of Alaska Regions. North Pacific Fishery Management Council, Anchorage, AK 99501. p. 297-414.

Sadorus, L. L. and Walker, J. 2016. IPHC Oceanographic monitoring program 2015. Int. Pac. Halibut Comm. Report of Assessment and Research Activities 2015: 398-404.

Sigler, M. F., M. F. Cameron, M. P. Eagleton, C. H. Faunce, J. Heifetz, T. E. Helser, B. J. Laurel, M. R. Lindeberg, R. A. McConnaughey, C. H. Ryer, and T. K. Wilderbuer. 2012. Alaska Essential Fish Habitat Research Plan. AFSC Processed Rep. 2012-06, 21 p. Alaska Fish. Sci. Cent., NOAA, NMFS, 17109 Pt. Lena Loop Road, Juneau, AK 99801

Zador, S. (ed.) 2015. Ecosystem Considerations 2015; Status of Alaska’s Marine Ecosystems. Presented to NPFMC, Nov, 2015.

**Non-Conformance Number (if relevant)**

**NA**

<sup>122</sup> <http://www.npfmc.org/habitat-protections/essential-fish-habitat-efh/>

**Supporting Clause 5.3**

Management organizations shall cooperate with relevant international organizations to encourage research in order to ensure optimum utilization of fishery resources.

FAO CCRF (1995) 12.7

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b>				
<p>There is extensive cooperation on various aspects of research, stock assessment, and management of sablefish between the fisheries agencies (e.g. DFO and NMFS) of Canada and USA. There have been occasional cooperative research projects with other nations.</p>				
<b>Evidence:</b>				
<p>The only two nations involved in the sablefish fishery in the eastern North Pacific are Canada and the United States of America. The resources in each nation’s waters are managed separately, and each nation conducts surveys that occur in adjacent geographical areas, as well as a survey conducted by IPHC that covers areas in the EEZs of both countries. Japan and USA conducted cooperative longline surveys from 1978 to 1994 and these data are used in the current stock assessment.</p> <p>There is cooperation on various aspects of research, stock assessment, and management between the fisheries agencies (e.g. DFO and NMFS) of USA and Canada. Declaration of the 200 mile EEZ’s by both countries in the late 1970’s drastically reduced and eventually eliminated sablefish fishing in Alaskan and adjacent BC waters by other countries other than Canada and USA. There has been cooperative research and surveys carried out on the stock involving other nations, such as the 1984 US-Japan bottom trawl survey in the GOA (Brown 1986), and the USA-Japan longline surveys, but it has been more limited in recent years.</p>				
<b>References:</b>	<p>Brown, E. S. 1986. Preliminary results of the 1984 U.S.-Japan Cooperative Bottom Trawl Survey of the central and western Gulf of Alaska. In Major, R.L. (editor), Condition of groundfish resources of the Gulf of Alaska region as assessed in 1985. U.S. Dep. Commer., NOAA Tech. Memo. NMFS F/NWC-106. p.259-296.</p>			
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 5.4**

The fishery management organizations shall directly, or in conjunction with other States, develop collaborative technical and research programs to improve understanding of the biology, environment and status of trans-boundary aquatic stocks.

FAO CCRF (1995) 12.7, 12.17

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b>				
<p>The main transboundary issues for the Alaskan sablefish stock are between Canada and USA, and both countries have extensive scientific programs for sablefish research and assessment, and extensive collaboration exists on various issues. Catches of sablefish in Russian waters have been at very low levels in recent years and there are no transboundary concerns.</p>				
<b>Evidence:</b>				
<p>The main transboundary issues for the Alaskan sablefish stock are between Canada and USA. Both countries have extensive scientific programs for research and assessment, and collaborate on numerous topics related to sablefish science and management. Data from the DFO sablefish surveys in B.C. waters are considered in the NMFS/NPFMC assessment process and SAFE document. To better understand the contribution to Alaska sablefish productivity from B.C. sablefish, NMFS scientists have considered conducting an area-wide study of sablefish tag recoveries, as well as attempt to model the population to include B.C. sablefish and U.S. West Coast sablefish (Hanselman et al. 2015). MSE studies on sablefish in Canadian waters recognize the mixing issue also (Cox et al. 2011; DFO 2016).</p> <p>Currently, there is no directed fishery for sablefish in Russian waters<sup>123</sup>. Sablefish are only caught as bycatch in redfish and halibut fisheries there, and official statistics catches of sablefish in Russian waters from 2006 to 2011 ranged from only 7 t to 27 t.</p>				
<b>References:</b>	<p>Cox, S.P., Kronlund, A.R., and Lacko, L. 2011. Management procedures for the multi-gear sablefish (<i>Anoplopoma fimbria</i>) fishery in British Columbia, Canada. DFO Can. Sci. Advis. Sec. Res. Doc. 2011/063. viii + 45 p.</p> <p>DFO. 2016. A revised operating model for Sablefish (<i>Anoplopoma fimbria</i>) in British Columbia, Canada. DFO Can. Sci. Advis. Sec. Sci. Advis. Rep. 2016/015.</p> <p>Hanselman, D.H., C. Lunsford, and C. Rodgveller. 2015. Assessment of the sablefish stock in Alaska. Stock Assessment and Fishery Evaluation Reports for the Groundfish Resources of the Bering Sea/Aleutian Islands and Gulf of Alaska Regions. North Pacific Fishery Management Council, Anchorage, AK 99501. p. 297-414.</p>			

<sup>123</sup> [http://www.vniro.ru/files/trydi\\_vniro/archive/tv\\_2016\\_t\\_160\\_article\\_10.pdf](http://www.vniro.ru/files/trydi_vniro/archive/tv_2016_t_160_article_10.pdf)

<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>
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**Supporting Clause 5.5**

Data generated by research shall be analyzed and the results of such analyses published in a way that ensures confidentiality is respected, where appropriate.

FAO CCRF (1995) 12.3

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b>				
<p>Scientific data from various sources are analyzed and presented in peer reviewed meetings and/or in primary literature, following scientific protocols. Results of these analyses are disseminated in a timely fashion through numerous methods, including scientific publications, and as information on websites of various agencies, in order to contribute to sablefish fisheries conservation and management. Confidentiality is required by Alaska statute and data is redacted in reports when necessary. The nature of the confidentiality is sometimes determined by the number of individuals or entities contained in the dataset.</p>				
<b>Evidence:</b>				
<p>Data collected by scientists from the many surveys and sablefish fisheries are analyzed and presented in peer reviewed meetings and/or in primary literature, following rigorous scientific protocols. These have been described extensively in previous Clauses. Results of these analyses are disseminated in a timely fashion through numerous methods, including scientific publications, and as information on NMFS, ADF&amp;G, and NPFMC websites, in order to contribute to fisheries conservation and management. Confidentiality of individuals or individual vessels (e.g. in the analysis of fishery CPUE data) is fully respected where necessary. By Alaska Statute (16.05.815 Confidential Nature of Certain Reports and Records), except for certain circumstances, all records obtained by the state concerning the landing of fish, shellfish, or fishery products and annual statistical reports of fishermen, buyers, and processors may not be released. To ensure confidentiality, fishery data are routinely redacted from ADF&amp;G reports if the data for a time/area strata were obtained from a small number of participants.</p>				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

## Section C: The Precautionary Approach

### 7.6. Fundamental Clause 6

The current state of the stock shall be defined in relation to reference points or relevant proxies or verifiable substitutes allowing for effective management objectives and targets. Remedial actions shall be available and taken where reference point or other suitable proxies are approached or exceeded.

FAO CCRF (1995) 7.5.3, 7.6.1

FAO Eco (2009) 29.2-29.2bis, 29.6, 30-30.2

FAO Eco (2011) 36.2, 36.3, 37, 37.1, 37.2

<b>No. Supporting clauses/sub-clauses</b>	4
<b>Supporting clauses applicable</b>	4
<b>Supporting clauses not applicable</b>	0
<b>Non Conformances</b>	0

#### Supporting Clause 6.1

States shall establish safe target reference point(s) for management.

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

**Summary Evidence:**

Target reference points for biomass and fishing mortality (harvest rate) have been developed based on sound scientific analyses. Exploitation levels for the individual management areas are established separately (apportionment) to ensure that localized overfishing does not occur.

**Evidence:**

The NPFMC harvest control system used for Alaskan groundfish is complex and multi-faceted in order to address issues related to sustainability, legislative mandates, and quality of information. By definition, the optimum yield (OY) reference point is the amount of fish which:

- a) will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems;
- b) is prescribed as such on the basis of the MSY from the fishery, as reduced by any relevant economic, social, or ecological factor; and
- c) In the case of an overfished fishery, provides for rebuilding to a level consistent with producing the MSY in such fishery.

An OY range has been established for both GOA and BSAI Regions. For GOA (for example), the upper end of the OY range, 800,000 mt for all groundfish, was derived from MSY information. The average MSY for all species of groundfish (excluding the other species category) between 1983 and 1987 was 873,070 mt. Therefore, the upper end of the OY range is about 92 percent of the mean MSY for the five-year period.

Maximum fishing mortality threshold, also called the “OFL control rule”, is the level of fishing mortality (F), on an annual basis, used to compute the smallest annual level of catch that would constitute overfishing.



Overfishing occurs whenever a stock or stock complex is subjected to a level of fishing mortality or annual total catch that jeopardizes the capacity of a stock or stock complex to produce MSY on a continuing basis.

National Standard 1 of the MSA requires that conservation and fisheries management measures prevent overfishing while achieving optimal yield for each fishery on a continuing basis. The status of US fish stocks is determined by 2 metrics. The first is the relationship between the actual exploitation level and the overfishing level (OFL). If the exploitation level (or fishing mortality) exceeds the FOFL, the stock is considered to be subject to overfishing. The second is the relationship between the stock size and the minimum stock size threshold (MSST). If the stock size is below the MSST it is considered to be overfished. A stock is considered to be approaching an overfished condition when it is projected that there is more than a 50% chance that the biomass of the stock or stock complex will decline below the MSST within 2 years.

Harvest specifications are made annually by NPFMC, and include the overfishing limit, acceptable biological catch (ABC), and total allowable catch (TAC). The NPFMC management plans classify each stock based on a tier system (Tiers 1-6) with Tier 1 having the greatest level of information on stock status and fishing mortality relative to MSY considerations. The Tier system specifies the maximum permissible ABC and the Overfishing Level (OFL) for each stock in the complex (usually individual species but sometimes species groups). The BSAI and GOA groundfish fishery management plans<sup>124</sup> have pre-defined harvest control rules that define a series of target and limit reference points for sablefish and other groundfish covered by these plans. The overall objectives of the management plans are to prevent overfishing and to optimize the yield from the fishery through the promotion of conservative harvest levels while considering differing levels of uncertainty.

In Tiers 1–3, sufficient information is available to determine a target biomass level, which would be obtained at equilibrium when fishing according to the control rule with recruitment at the average historical level. Most of the larger and commercially important stocks under NPFMC management, including sablefish, are in Tier 3, which has sufficient information to determine surrogates for MSY-based reference points. The term “ $FX\%$ ” refers to the fishing mortality rate ( $F$ ) associated with an equilibrium level of spawning per recruit equal to  $X\%$  of the equilibrium level of spawning per recruit in the absence of any fishing. For tier 3, the term  $B40\%$  refers to the long-term average biomass that would be expected under average recruitment and  $F=F40\%$ . For Tier 3 stocks such as sablefish, the spawner-recruit relationship is uncertain, so that MSY cannot be estimated with confidence. The MSY proxy level is defined as  $B35\%$  and the MSST level is one-half of  $B35\%$ .

For state-managed sablefish fisheries, the Cook Inlet<sup>125</sup>, Prince William Sound<sup>126</sup> and the Aleutian Islands<sup>127</sup> state fisheries have guideline harvest limits (GHL) and are managed using NMFS assessment data (and therefore federal reference points), historical catches and effort, projected catch and effort, and a yield-per-unit-area model, among other parameters. In Southeast Alaska<sup>128</sup>, for the NSEI area, an  $F50\%$  biological reference point was used for calculating the 2015 ABC, resulting in a harvest rate of 7.1%. The SSEI sablefish population is managed based on relative abundance trends from survey and fishery CPUE data, as well as with survey and fishery biological data that are used to describe the age and size structure of the population, detect recruitment events, and determine the annual harvest objective (AHO). Stock assessment details for the state-managed fisheries have been provided under the previous fundamental clause (No. 5). Although there is not a full suite of reference points for these sablefish resources, the state fisheries appear to be well managed,

<sup>124</sup> <http://www.npfmc.org/wp-content/PDFdocuments/fmp/GOA/GOAfmfp.pdf>

<sup>125</sup> [http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareacookinlet.cookinlet\\_groundfish\\_sablefish\\_harvest](http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareacookinlet.cookinlet_groundfish_sablefish_harvest)

<sup>126</sup> [http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareapws.pws\\_groundfish\\_sablefish\\_harvest](http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareapws.pws_groundfish_sablefish_harvest)

<sup>127</sup> <http://www.adfg.alaska.gov/static/applications/DCFnewsrelease/644604937.pdf>

<sup>128</sup> [http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareasoutheast.sablefish\\_fishery\\_update](http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareasoutheast.sablefish_fishery_update)

with recent catches often being less than the specified GHs.	
References:	
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>

**Supporting Clause 6.2**

States shall establish safe limit reference point(s) for exploitation (i.e. consistent with avoiding recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible). When a limit reference point is approached, measures shall be taken to ensure that it will not be exceeded. For instance, if fishing mortality (or its proxy) is above the associated limit reference point, actions should be taken to decrease the fishing mortality (or its proxy) below that limit reference point.

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b>				
<p>NPFMC has established safe limit reference point(s) for exploitation, consistent with the Precautionary Approach. When a limit reference point is approached, the harvest rate is decreased linearly by a harvest control rule towards zero as the spawning biomass approaches a defined lower percentage of the estimated unfished level. If the stock is below this lower threshold, fishing ceases completely.</p>				
<b>Evidence:</b>				
<p>The BSAI and GOA groundfish fishery management plans<sup>129</sup> have pre-defined harvest control rules that define a series of target and limit reference points for sablefish and other groundfish covered by these plans. Each SAFE report describes the current fishing mortality rate, and stock biomass relative to the target and limit reference points. Management plans specify the Overfishing Limits (OFL) and the Fishing mortality rate (FOFL) used to set OFL, ABC, and the fishing mortality rate (FABC) used to set annual catch limits (ABC or ACL), the determination of each being dependent on the knowledge base for each stock. The overall objectives of the management plans are to prevent overfishing and to optimize the yield from the fishery through the promotion of conservative harvest levels while considering differing levels of uncertainty. The NPFMC harvest strategy was reviewed in 2002 by Goodman <i>et al.</i> That report contains a historical overview of the NPFMC approach to fishery harvest management, and an analysis of single-species, multispecies and ecosystem issues relating to the harvest strategy.</p> <p>In the NPFMC tier system, the sablefish stock in Alaska is currently managed under Tier 3. Stocks in tier 3 are further categorized as (a), (b), or (c) based on the relationship between biomass, <math>B_{40\%}</math>, and a lower value <math>B/B_{40\%} \leq 0.05</math>, with (3a) indicating a stock where biomass is above <math>B_{40\%}</math>, (3b) indicating a stock where biomass is below <math>B_{40\%}</math> but above the lower value, and (3c) indicating a stock where biomass is at or below the lower value. The category assigned to a stock determines the method used to calculate ABC and OFL. The harvest control rule is biomass-based, for which fishing mortality is constant when biomass is above the <math>B_{40\%}</math> target and declines linearly down to a threshold value when biomass drops below the target, consistent with the precautionary approach. The rule used to determine the Acceptable Biological Catch (ABC) is applied in exactly the same manner, i.e. based on a harvest control rule triggered by targets and limits. If the stock is in Tier 3c, <math>F_{OFL}</math> and <math>maxFABC</math> are set to zero.</p>				
<b>References:</b>	<p>Goodman, D., M. Mangel, G. Parkes, T. Quinn, V. Restrepo, T. Smith, and K. Stokes. 2002. Scientific Review of the Harvest Strategy Currently Used in the BSAI and GOA Groundfish Fishery Management Plans. Prepared for the North Pacific Fishery Management Council. 145p.</p>			
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

<sup>129</sup> North Pacific Fisheries Management Council Fisheries Management Plans <http://www.npfmc.org/fishery-management-plans/>

**Supporting Clause 6.3**

Data and assessment procedures shall be installed measuring the position of the fishery in relation to the reference points. Accordingly, the stock under consideration shall not be overfished (i.e. above limit reference point or proxy) and the level of fishing permitted shall be commensurate with the current state of the fishery resources, maintaining its future availability, taking into account that long term changes in productivity can occur due to natural variability and/or impacts other than fishing.

FAO CCRF (1995) 7.5.3, 7.6.1

FAO Eco (2009) 29.2-29.2bis, 29.6, 30-30.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

NMFS/NPFMC has an extensive stock assessment program, which is necessary to monitor and measure the status of the sablefish stocks relative to target and limit levels of exploitation and biomass. Extensive oceanographic monitoring is done in Alaskan waters as part of a number of projects, in order to monitor and predict changes of stock productivity.

**Evidence:**

Each SAFE report describes the current fishing mortality rate, stock biomass relative to the target and limit reference points. Management plans specify the Overfishing Limits (OFL) and the Fishing mortality rate (FOFL) used to set OFL, Acceptable Biological Catch (ABC) and the fishing mortality rate (FABC) used to set ABC, the determination of each being dependent on the knowledge base for each stock.

The 2015 SAFE (Hanselman et al. 2015) estimated the probability that projected sablefish biomass will fall, or stay below thresholds of B17.5% (MSST=1/2 B35%), B35% (MSY proxy), and B40% ( $B_{target}$ ) of the unfished spawning biomass. The probability that next year’s spawning biomass was below B35% was 0.89. During the next three years, the projected probability of being below B17.5% is near zero, the probability of being below B35% is 0.98, and the probability of staying below B40% is near 1. Based on these values, and comparing the 2014 catch to the 2014 OFL, by definition, the sablefish stock is not being subjected to overfishing, is not currently overfished, and is not approaching an overfished condition. Sablefish is currently in Tier 3b of the NPFMC categorization, and based on the applicable fishing mortality under the harvest control rule for Tier 3b, the maximum permissible ABC for 2016 is 11,795 t. The SAFE document also recommends the apportionment of this total, based on area-by-area survey biomass estimates for sablefish, into 6 ABC values (2 for BSAI, and 4 for GOA areas).

Extensive oceanographic monitoring is carried out in conjunction with the various longline and trawl surveys in Alaskan waters, as described in Clause 4. Monitoring of the Pacific Decadal Oscillation (PDO) regimes, a standard indicator of productivity in the north Pacific, is conducted, along with analyses of its potential impacts on productivity of North Pacific stocks, including sablefish. In addition, comprehensive Ecosystem Reports for BSAI and GOA are presented to NPFMC annually (e.g. Zador (ed). 2016<sup>130</sup>), which look at numerous elements of the Alaskan Ecosystems (see Clause 5.2 for more details).

<sup>130</sup> <http://www.afsc.noaa.gov/REFM/docs/2015/ecosystem.pdf>

<p><b>References:</b></p>	<p>Hanselman, D.H., C. Lunsford, and C. Rodgveller. 2015. Assessment of the sablefish stock in Alaska. Stock Assessment and Fishery Evaluation Reports for the Groundfish Resources of the Bering Sea/Aleutian Islands and Gulf of Alaska Regions. North Pacific Fishery Management Council, Anchorage, AK 99501. p. 297-414.</p> <p>Zador, S. (ed.) 2015. Ecosystem Considerations 2015; Status of Alaska’s Marine Ecosystems. Presented to NPFMC, Nov, 2015.</p>
<p><b>Non-Conformance Number (if relevant)</b></p>	<p><b>NA</b></p>

**Supporting Clause 6.4**

Management actions shall be agreed to in the eventuality that data sources and analyses indicate that these reference points have been exceeded.

FAO CCRF (1995) 7.5.3  
 FAO Eco (2009) 29.6, 30.2  
 FAO Eco (2011) 36.3  
 FAO Eco (2011) 36.2, 36.3, 37, 37.1, 37.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> NPFMC has developed a Harvest Control Rule which calls for specific management actions when reference points have been exceeded.				
<b>Evidence:</b> The NPFMC management of sablefish includes a harvest control rule (HCR) based on the reference points described in the previous clauses. This HCR triggers management actions to reduce fishing mortality when biomass falls below B40% and to set FOFL and maxFABC to zero if $B/B_{40\%} \leq 0.05$ . At present the OFL and ABC are set based on the stock being in Tier 3b of NPFMC management. The sablefish stock is not overfished (i.e. it is not below MSST ( $1/2 B_{MSY}$ proxy, or $1/2 B_{35\%}$ )).  The following section on stock rebuilding is directly from the NPFMC FMP for GOA Groundfish: Within two years of such time as a stock or stock complex is determined to be overfished, an FMP amendment or regulations will be designed and implemented to rebuild the stock or stock complex to the MSY level within a time period specified at Section 304(e)(4) of the Magnuson-Stevens Act. If a stock is determined to be in an overfished condition, a rebuilding plan would be developed and implemented for the stock, including the determination of an $F_{OFL}$ and $F_{MSY}$ that will rebuild the stock within an appropriate time frame.				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				NA

**7.7. Fundamental Clause 7**

Management actions and measures for the conservation of stock and the aquatic environment shall be based on the precautionary approach. Where information is deficient a suitable method using risk assessment shall be adopted to take into account uncertainty.

FAO CCRF (1995) 7.5.1/7.5.4/7.5.5/12.3  
 FAO ECO (2009) 29.6/32  
 FAO Eco (2011) 36.7

<b>No. Supporting clauses/sub-clauses</b>	5
<b>Supporting clauses applicable</b>	5
<b>Supporting clauses not applicable</b>	0
<b>Non Conformances</b>	

**Supporting Clause 7.1**

The precautionary approach shall be applied widely to conservation, management and exploitation of living aquatic resources in order to protect them and preserve the aquatic environment. This should take due account of stock enhancement procedures, where appropriate. Absence of scientific information shall not be used as a reason for postponing or failing to take conservation and management measures. Relevant uncertainties shall be taken into account through a suitable method of risk assessment, including those associated with the use of introduced or translocated species.

FAO Eco (2009) 29.6  
 FAO Eco (2011) 36.7

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> Precautionary approach-based reference points are used in the management of this stock. Scientific information and stock assessments available are at a consistently high level, and clearly provide the necessary basis for conservation and management decisions. Uncertainties are taken into account in the stock assessment process, and risk assessment is used in providing harvest options.				
<b>Evidence:</b> Precautionary approach-based reference points are used in the management of this sablefish stock, as described in Clause 6. The scientific information and stock assessments available (as described in Clauses 4 and 5) are at a consistently high level, and provide the necessary basis for conservation and management decisions. Scientific advice for management of the stock is presented for different harvest levels (Hanselman et al. 2015) which explains the risk of biomass levels being below the adopted reference points. State-managed sablefish have some stock assessment based reference points, and/or make use of adjacent federal-based reference points and precautionary approaches where possible. There are no stock enhancements, introduced or translocated species concerns.				
<b>References:</b>	Hanselman, D.H., C. Lunsford, and C. Rodgveller. 2015. Assessment of the sablefish stock in Alaska. Stock Assessment and Fishery Evaluation Reports for the Groundfish			

	Resources of the Bering Sea/Aleutian Islands and Gulf of Alaska Regions. North Pacific Fishery Management Council, Anchorage, AK 99501. p. 297-414.
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>



**Supporting Clause 7.1.1**

In implementing the precautionary approach, States shall take into account, inter alia, of uncertainties relating to the size and productivity of the stocks, reference points, stock condition in relation to such reference points, levels and distribution of fishing mortality and the impact of fishing activities, including discards, on non-target and associated or dependent species as well as environmental and socio-economic conditions.

FAO CCRF (1995) 7.5.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

The sablefish stock assessment addresses uncertainty associated with estimation of model parameters, treatment of the data sources, natural mortality, and recruitment. Retrospective analyses were performed for the 2015 assessment, and showed little pattern in the most recent years. Risks of exceeding biomass reference points for the next 3 years were calculated.

**Evidence:**

This stock assessment explicitly considers uncertainty associated with estimation of model parameters and treatment of the data sources. For example, the 2015 stock assessment used a Bayesian analysis to compare a selection of parameter estimates including the current SSB and estimate of F40%, from simulations with maximum-likelihood estimates, and compared each method’s associated level of uncertainty. Assessment results for recruitment, total biomass (2+), and spawning biomass are shown with lower and upper 95% credible intervals.

Retrospective analyses are routinely carried out in each stock assessment to examine the consistency among successive estimates of the same parameters obtained as new data are added to a model (i.e. to see if/how much the results of previous stock assessments would differ from the most recent one, if they all were done with the same model). For the 2015 assessment, there is only a small positive retrospective bias and the retrospective patterns are well within the posterior uncertainty of each assessment, showing little pattern in the most recent years (Hanselman et al. 2015).

Future recruitment to a stock usually represents an element of uncertainty around stock productivity, as it is often somewhat unpredictable. In this sablefish stock assessment, recruitment is not estimated with a stock-recruit relationship, but is instead estimated using a level of average recruitment with deviations from average recruitment for the years 1933-2014. An integrated GOA Ecosystem project funded by the North Pacific Research Board is underway and is looking at recruitment processes of major groundfish including sablefish. NMFS/AFSC scientists are working closely with this project to help understand sablefish recruitment dynamics, and one of the research priorities identified in the 2015 SAFE is to continue to explore the use of environmental data to aid in determining recruitment.

Natural mortality has been modeled in a variety of ways in previous sablefish assessments. A detailed analysis in the 2004 assessment showed that natural mortality was not well-estimated by the available data (Sigler et al. 2004). Since then it has been set at a fixed value of 0.10, appropriate for a long-lived species such as sablefish.

To allow evaluation of various catch levels on stock and fishery projections based on the 2015 assessment, and to determine whether the stock is overfished or approaching an overfished condition, a series of catch

projections and a Bayesian analysis were carried out in the 2015 SAFE. The assessment authors also estimated the probability that projected abundance will fall, or stay below thresholds of B17.5% (MSST), and B35% (MSY), and B40% (*Btarget*) of the unfished spawning biomass, as it is important to know the risk of falling below these thresholds. The probability that next year’s spawning biomass was below *B35%* was 0.89. During the next three years, the probability of being below B17.5% is near zero, the probability of being below B35% is 0.98, and the probability of staying below B40% is near 100% (Hanselman et al. 2015).

As noted in Clause 6.1, the harvest of sablefish is apportioned into several smaller areas, mainly to avoid localized overfishing of the resource. A project in conjunction with a student from the University of Alaska-Fairbanks has begun re-examining the apportionment strategy and conducting a management strategy evaluation. A spatial sablefish model has been developed, but the management strategy evaluation is still in early stages of development.

<b>References:</b>	<p>Hanselman, D.H., C. Lunsford, and C. Rodgveller. 2015. Assessment of the sablefish stock in Alaska. Stock Assessment and Fishery Evaluation Reports for the Groundfish Resources of the Bering Sea/Aleutian Islands and Gulf of Alaska Regions. North Pacific Fishery Management Council, Anchorage, AK 99501. p. 297-414.</p> <p>Sigler, M.F., C.R. Lunsford, and J.T. Fujioka. 2004. Alaska sablefish assessment for 2005. <i>In</i> Stock assessment and fishery evaluation report for the groundfish fisheries of the Gulf of Alaska. North Pacific Fishery Management Council, Anchorage, AK 99510.</p>
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<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>
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**Supporting Clause 7.1.2**

In the absence of adequate scientific information, appropriate research shall be initiated in a timely fashion.

FAO CCRF (1995) 7.5.1, 12.3

FAO Eco (2009) 29.6/32

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b>				
<p>The scientific information available for this resource is of a very high standard, and includes long time series of catch and fishery data, as well as fishery independent data. The annual NMFS/NPFMC stock assessments are of excellent quality, and are subjected to multiple levels of peer review. Where data gaps have been identified, the NMFS/AFSC has ongoing research programs capable of addressing these needs. Organizations such as NPRB allow scientists from a number of disciplines and agencies to work collaboratively on a variety of fishery related studies in Alaskan waters, including some on sablefish. Research is also conducted by ADF&amp;G on the state-managed sablefish resources.</p>				
<b>Evidence:</b>				
<p>The scientific information available for this resource is of a very high standard. There are long time series of catch and fishery data, as well as fishery independent data, primarily surveys, which provide thorough coverage of the stock area and a wealth of biological data. The annual NMFS/NPFMC stock assessments are of excellent quality, are reviewed at multiple levels (e.g. NPFMC’s SSC and Advisory Panel), and are externally reviewed on a regular basis. Details of the data and assessment are in Clauses 4 and 5.</p> <p>In 2016, NMFS requested the Center for Independent Experts (CIE) to conduct a peer review of the agency's stock assessment of Alaska Sablefish. The CIE is a group that provides independent peer reviews of NMFS science nationwide, including reviews of stock assessments for fish and marine mammals<sup>131</sup>. A meeting between CIE reviewers and NMFS assessment scientists was held at AFSC in Juneau in May, 2016, and the CIE reports will be available later in the year. A CIE review of sablefish assessments was conducted by 3 independent fisheries experts in 2009<sup>132</sup>.</p> <p>Where data gaps or recommendations for improvements have been identified, NMFS has ongoing research programs capable of addressing these needs. In the 2015 SAFE, there is a detailed section on data gaps and research priorities, outlining eight focus areas for future sablefish research. Topics include effects of whale depredation on abundance indices, use of environmental data to aid in determining recruitment dynamics, enhanced ecosystem considerations, and a spatially explicit assessment model which is to include a management strategy evaluation of apportionment strategies (Hanselman et al. 2015). Various other studies are conducted, some in collaboration with other agencies, such as the major projects on GOA and BSAI ecosystems funded by NPRB (described in more detail in Clause 5). ADF&amp;G also conducts research and carries out surveys on sablefish in the state-managed waters.</p>				
<b>References:</b>	Hanselman, D.H., C. Lunsford, and C. Rodgveller. 2015. Assessment of the sablefish stock in Alaska. Stock Assessment and Fishery Evaluation Reports for the Groundfish			

<sup>131</sup> <http://ciereviews.org/>

<sup>132</sup> <https://www.st.nmfs.noaa.gov/science-quality-assurance/cie-peer-reviews/cie-review-2009>

	Resources of the Bering Sea/Aleutian Islands and Gulf of Alaska Regions. North Pacific Fishery Management Council, Anchorage, AK 99501. p. 297-414.
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>

**Supporting Clause 7.2**

In the case of new or exploratory fisheries, States shall adopt as soon as possible cautious conservation and management measures, including, inter alia, catch limits and effort limits. Such measures should remain in force until there are sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks, whereupon conservation and management measures based on that assessment should be implemented. The latter measures should, if appropriate, allow for the gradual development of the fisheries.

FAO CCRF (1995) 7.5.4

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> Fisheries for sablefish are well established, with catch and/or effort limits existing for all fleet sectors. Any new fisheries/entrants to the fishery are subject to the existing conservation and management measures, which are extensive. New measures governing gear types or operations are subject to public advisory processes and periods of experimental fishing before being implemented.				
<b>Evidence:</b> Virtually all current fisheries for sablefish, including longline and pot, are well established and have existed for many years. Catch and/or effort limits exists for all fleet sectors, and entry into the commercial fishery is limited. Any new fisheries/entrants to the fishery are subject to the existing conservation and management measures, which are extensive. New measures governing gear types or operations are subject to a long public advisory process within NPFMC and NMFS and usually require periods of experimental fishing before being implemented. An example is the recent measure to allow retention of halibut in sablefish pots/traps, discussed further in Clause 8.11.				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>	

**Supporting Clause 7.3**

Contingency plans shall be agreed in advance for the appropriate management response to serious threats to the resource as a result of overfishing or adverse environmental changes or other phenomena adversely affecting the fishery resource. Such measures may be temporary and shall be based on best scientific evidence available.

FAO CCRF (1995) 7.5.5

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b>				
<p>There are pre-agreed NPFMC harvest control rules in place to ensure overfishing does not occur on the sablefish stock. Extensive provisions exist in the NMFS fishery regulations for in-season adjustments (e.g. gear modifications, fishery closures) where necessary to protect the resource from biological harm.</p>				
<b>Evidence:</b>				
<p>There are pre-agreed NPFMC harvest control rules in place to ensure overfishing does not occur on the sablefish stock, as noted in Clause 6. In addition the NPFMC FMPs contain the following specific clause: “In the event that a stock or stock complex is determined to be approaching a condition of being overfished, an in-season action, an FMP amendment, a regulatory amendment or a combination of these actions will be implemented to prevent overfishing from occurring”<sup>133</sup>. The FMPs also note that information and data relating to stock status may become available to NPFMC during the course of a fishing year which warrants in season adjustments to a fishery. Certain changes warrant swift action by NMFS to protect the resource from biological harm by instituting gear modifications or adjustments through closures or restrictions. Other changes warrant action to provide greater fishing opportunities for the industry by instituting time or area adjustments through openings or extension of a season beyond a scheduled closure. Other in season actions may be necessary for interim fishery closures to reduce prohibited species (e.g. halibut) bycatch rates and the probability of premature attainment of PSC limits.</p> <p>Section 679.25 of the Federal Fishing Regulations for Fisheries of the Exclusive Economic Zone off Alaska deals with NMFS in-season adjustments. These adjustments include closure, extension, or opening of a season in all or part of a management area; modification of the allowable gear to be used in all or part of a management area; adjustment of TAC and PSC limits; and interim closures of statistical areas, or portions thereof, to directed fishing for specified groundfish species. Any in season adjustment taken must be based on a determination that such adjustments are necessary to prevent one of a number of conditions from occurring, including overfishing of any species or stock of fish or shellfish<sup>134</sup>.</p>				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>	

<sup>133</sup> <http://www.npfmc.org/wp-content/PDFdocuments/fmp/GOA/GOAfmfp.pdf>

<sup>134</sup> [https://alaskafisheries.noaa.gov/sites/default/files/part679\\_all.pdf](https://alaskafisheries.noaa.gov/sites/default/files/part679_all.pdf)

## Section D: Management Measures

### 7.8. Fundamental Clause 8

Management shall adopt and implement effective management measures designed to maintain stocks at levels capable of producing maximum sustainable yields, including harvest control rules and technical measures applicable to sustainable utilization of the fishery and be based upon verifiable evidence and advice from available scientific and objective, traditional sources.

FAO CCRF (1995) 7.1.1/7.1.2/7.1.6/7.4.1/7.6.1/7.6.9/12.3

FAO Eco (2009) 29.2/29.4/30

FAO Eco (2011) 36.2, 36.3

<b>No. Supporting clauses/sub-clauses</b>	17
<b>Supporting clauses applicable</b>	16
<b>Supporting clauses not applicable</b>	1
<b>Non Conformances</b>	

### Supporting Clause 8.1

Conservation and management measures shall be designed to ensure the long-term sustainability of fishery resources at levels which promote the objective of optimum utilization, and be based on verifiable and objective scientific and/or traditional, fisher or community sources.

FAO CCRF (1995) 7.1.1 Others 7.4.1/7.6.7

FAO Eco (2009) 29.2/29.4

FAO Eco (2011)36.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

Conservation and management measures in place ensure the long-term sustainability of the resources. FMPs which are based on the national standards in the Magnuson-Stevens Act have objectives to prevent overfishing and promote sustainable and equitable use of the sablefish resource. NPFMC has established a science-based precautionary approach and harvest control rule and based on the scientific assessment of the stock, uses this approach to determine appropriate harvest levels. A management strategy evaluation of the apportionment strategies used to determine area-specific ABC values for sablefish is underway.

**Evidence:**

The Magnuson-Stevens Fishery Conservation and Management Act (MSA)<sup>135</sup> is the primary domestic legislation governing management of the USA marine fisheries. The act establishes MSY as the basis for fishery management and requires that: the fishing mortality rate does not jeopardize the capacity of a stock or stock complex to produce MSY; the abundance of an overfished stock or stock complex is rebuilt to a level that is capable of producing MSY; and OY not exceed MSY. NPFMC FMPs<sup>136</sup> for GOA and BSAI Regions present long-

<sup>135</sup> <http://www.nmfs.noaa.gov/sfa/magact/>

<sup>136</sup> <http://www.npfmc.org/wp-content/PDFdocuments/fmp/GOA/GOAfm.pdf>

term management objectives for the Alaska sablefish fishery. These include sections that describe a Summary of Management Measures and Management and Policy Objectives. The Magnuson-Stevens Act (MSA) sets out ten national standards for fishery conservation and management, with which all fishery management plans must be consistent. Under the direction of the NPFMC, the GOA and BSAI FMPs define nine management and policy objectives that are reviewed annually, and they include preventing overfishing, promoting sustainable fisheries and communities, and promoting equitable and efficient use of fishery resources. The approach used by NPFMC for sablefish includes the best scientific advice available, and decisions are based on a precautionary approach which includes harvest control rules (outlined in previous sections). The federal sablefish fishery is managed under an Individual Fishing Quota system.

In state waters (0-3 nm), five sablefish state fisheries are managed by the ADF&G and the BOF outside the IFQ program. Under the major State-managed sablefish fisheries, the use of an equal quota share system is very much like individual fishery quotas, and produces the same efficiencies. Two minor state fisheries are in Cook Inlet and the Aleutian Islands managed using a Guideline Harvest Level (GHL), which is determined based on harvest history, fishery performance, and the federal survey for the area. Three major state fisheries exist which are limited entry and are located in Prince William Sound, Chatham and Clarence Strait. The Prince William Sound sablefish fishery is managed using a GHL and derived from the estimated area of sablefish habitat and a yield-per-unit-area model. For the Clarence and Chatham Strait fisheries an annual harvest objective is set with regard to survey and fishery catch per unit effort and biological characteristics of the population. In addition, in Chatham Strait an annual stock assessment is performed which includes a mark-recapture estimate of the population abundance.

As noted in Clause 6.3, an apportionment of the stock-wide ABC, into 6 ABC values (2 for BSAI, and 4 for GOA areas) based on area-by-area survey biomass estimates for sablefish, is provided in the annual SAFE document. A management strategy evaluation of the apportionment strategies (Hanselman et al. 2015) is underway.

<b>References:</b>	Hanselman, D.H., C. Lunsford, and C. Rodgveller. 2015. Assessment of the sablefish stock in Alaska. Stock Assessment and Fishery Evaluation Reports for the Groundfish Resources of the Bering Sea/Aleutian Islands and Gulf of Alaska Regions. North Pacific Fishery Management Council, Anchorage, AK 99501. p. 297-414.
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<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>
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**Supporting Clause 8.1.1**

Management targets are consistent with achieving maximum sustainable yield (MSY) (or a suitable proxy) on average, or a lesser fishing mortality if that is optimal in the circumstances of the fishery (e.g. multispecies fisheries) or to avoid severe adverse impacts on dependent predators.

FAO Eco (2009) 29.2

FAO Eco (2011) 36.3

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

NPFMC uses a multi-tier precautionary approach to management, which includes Optimal Yield (multi-species) and MSY (single species) reference points for the management of groundfish, including sablefish, in the GOA and BSAI areas. The OY takes into consideration the total amount of fish that can be harvested from each area. State-managed sablefish fisheries use federal-based reference points where possible.

**Evidence:**

NPFMC uses a multi-tier precautionary approach, which includes Optimal Yield and MSY reference points. By definition, the optimum yield (OY) reference point is the amount of fish which:

- a) will provide the greatest overall benefit to the Nation, particularly with respect to food production and recreational opportunities, and taking into account the protection of marine ecosystems;
- b) is prescribed as such on the basis of the MSY from the fishery, as reduced by any relevant economic, social, or ecological factor; and
- c) In the case of an overfished fishery, provides for rebuilding to a level consistent with producing the MSY in such fishery.

OY is given as a range for the groundfish complexes in the BSAI and the GOA, and the sum of the TACs of all groundfish species (except *P. halibut*) is required to fall within the range. The range for BSAI is 1.4 to 2.0 million mt<sup>137</sup> while the range for GOA is 116 to 800 thousand mt<sup>138</sup>. To prevent overfishing, NPFMC management objectives include the following measures specific to Optimum Yield:

Adopt conservative harvest levels for multi-species and single species fisheries and specify optimum yield; 2) continue to use the 2 million mt optimum yield cap for the BSAI groundfish fisheries; and 3) provide for adaptive management by continuing to specify optimum yield as a range.

In the state-managed fisheries, the Cook Inlet, Prince William Sound and the Aleutian Islands fisheries have harvest limits (GHL) and are managed using NMFS assessment data, and therefore federal reference points. For the NSEI area, the 2013 point estimate of abundance was used to forecast abundance and biomass for the 2015 fishery using updated biological data from the fishery and survey. As in previous years, an F50% biological reference point was used for calculating the 2015 ABC, resulting in a harvest rate of 7.1%. The SSEI sablefish population is managed based on relative abundance trends from survey and fishery CPUE data, as well as with survey and fishery biological data that are used to describe the age and size structure of the population and detect recruitment events. Although there is not a full suite of reference points, the state fisheries appear to be well managed, with recent catches often being less than the specified GHLs.

<sup>137</sup> <http://www.npfmc.org/wp-content/PDFdocuments/fmp/BSAI/BSAIfmp.pdf>

<sup>138</sup> <http://www.npfmc.org/wp-content/PDFdocuments/fmp/GOA/GOAmp.pdf>

<b>References:</b>	
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>

**Supporting Clause 8.1.2**

In the evaluation of alternative conservation and management measures, their cost-effectiveness and social impact shall be considered.

FAO CCRF (1995) 7.6.7

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> NPFMC FMPs for Alaskan groundfish recognize the need to balance many competing uses of marine resources and different social and economic goals for sustainable fishery management, including protection of the long-term health of the resource and the optimization of yield. The annual FMPs include a section on the economic and socioeconomic characteristics of the fisheries and communities in Alaska. Harvest levels for each groundfish species or species group that are set by NPFMC are based on the best biological, ecological, and socioeconomic information available.				
<b>Evidence:</b> NPFMC acknowledges in its FMPs <sup>139</sup> for Alaskan groundfish that its management approach recognizes the need to balance many competing uses of marine resources and different social and economic goals for sustainable fishery management, including protection of the long-term health of the resource and the optimization of yield. Their annual FMPs include a substantial section on the economic and socioeconomic characteristics of the fisheries and communities in Alaska (Fissel et al 2015). Harvest levels for each groundfish species or species group that are set by the Council for a new fishing year are based on the best biological, ecological, and socioeconomic information available, and follow a rigorous and public peer-reviewed process.				
<b>References:</b>	Fissel, B., M. Dalton, R. Felthoven, B. Garber-Yonts, A. Haynie, A. Himes-Cornell, S. Kasperski, J. Lee, D. Lew, C. Seung. 2015. Stock Assessment and Fishery Evaluation Report for the Groundfish Fisheries of the Gulf of Alaska and Bering Sea/Aleutian Island Area: Economic Status of the Groundfish Fisheries off Alaska, 2014.			
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

<sup>139</sup> <http://www.npfmc.org/wp-content/PDFdocuments/fmp/GOA/GOAfm.pdf>

**Supporting Clause 8.1.3**

Studies shall be promoted which provide an understanding of the costs, benefits and effects of alternative management options designed to rationalize fishing, in particular, options relating to excess fishing capacity and excessive levels of fishing effort.

FAO CCRF (1995) 7.4.3

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b>				
<p>Studies have been done demonstrating the impact on fishing capacity of introducing the IFQ program in 1995, which was a major change in the way the sablefish/halibut longline fishery operates. The number of active vessels participating in the sablefish IFQ program has declined by 48% from 1995 to 2014. NPFMC and NMFS hosted a workshop in April 2016 to get better information on how the implementation of the IFQ program affected crew members.</p>				
<b>Evidence:</b>				
<p>Under the individual fishing quota (IFQ) share program in the Alaskan fishery for sablefish (introduced in 1995), fishing capacity (vessels and gear) has been significantly reduced. Since IFQ was implemented, the number of vessels declined 48% to 315 active in the sablefish IFQ fishery in 2014 (Fissel et. al 2015). Detailed reports on fishing capacity, such as these, are completed annually by NMFS as part of their annual reporting practices, as noted in Clauses 4.5 and 5.1.2.</p> <p>NPFMC and NMFS hosted a workshop in April, 2016 in Anchorage, AK on crew member impacts of the implementation of the halibut and sablefish IFQ program as part of a comprehensive review of the program. This workshop intended to address the limited amount of information available on the impacts of the program on crew members and the evolution of crew employment since IFQ implementation<sup>140</sup>.</p> <p>The Halibut and Sablefish IFQ program is one of only two North Pacific groundfish catch share fisheries that include a cost recovery provision in which the fishers pay a fee based on the cost to the government to manage the program. Recoverable costs cannot exceed 3% of the total ex-vessel value of the fishery and include the costs related to management, data collection, and enforcement of a certain programs such as the Community Development Quota Program. Cost recovery began in 2000 for the sablefish IFQ program.</p>				
<b>References:</b>	<p>Fissel, B., M. Dalton, R. Felthoven, B. Garber-Yonts, A. Haynie, A. Himes-Cornell, S. Kasperski, J. Lee, D. Lew, C. Seung. 2015. Stock Assessment and Fishery Evaluation Report for the Groundfish Fisheries of the Gulf of Alaska and Bering Sea/Aleutian Island Area: Economic Status of the Groundfish Fisheries off Alaska, 2014.</p>			
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

<sup>140</sup> <http://npfmc.legistar.com/gateway.aspx?M=F&ID=95fe5ec2-18f3-44bc-bcd9-7944aa41fc1b.pdf>

**Supporting Clause 8.2**

States shall prohibit dynamiting, poisoning and other comparable destructive fishing practices.

FAO CCRF (1995) 8.4.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> Destructive fishing practices are not permitted in Alaskan waters, and there is no evidence to suggest they are occurring for sablefish.				
<b>Evidence:</b> As listed in the NPFMC FMPs and NMFS regulations, the only legal gears for taking sablefish in the Alaskan fisheries are hook and line, pot, jig, and trawl. No destructive gears such as dynamite or poison are permitted, nor is there any evidence that such gears are being used illegally.				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 8.3**

States shall seek to identify domestic parties having a legitimate interest in the use and management of the fishery. When deciding on use, conservation and management of the resource, due recognition shall be given, where relevant, in accordance with national laws and regulations, to the traditional practices, needs and interests of indigenous people and local fishing communities which are highly dependent on these resources for their livelihood. Arrangements shall be made to consult all the interested parties and gain their collaboration in achieving responsible fisheries.

FAO CCRF (1995) 7.1.2, 7.1.6, 7.6.6

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

NPFMC established a Rural Outreach Committee in 2009 to improve outreach and communications with rural communities and Alaska Native entities and develop a method for systematic documentation of Alaska Native and community participation in the development of fishery management actions. The Western Alaska Community Development Quota (CDQ) Program was created by the NPFMC in 1992 to provide western Alaska communities an opportunity to participate in the BSAI fisheries. Various other mechanisms exist to consult interested parties and gain their collaboration in achieving responsible fisheries.

**Evidence:**

The NPFMC is responsible for allocation of the sablefish resource among user groups in Alaska waters. In addition, the Alaskan Board of Fisheries (BOF) public meetings process provides a regularly scheduled public forum for all interested individuals, fishermen, fishing organizations, environmental organizations, Alaskan Native organizations and other governmental and non-governmental entities that catch sablefish off Alaska to participate in the development of legal regulations for fisheries.

The NPFMC established a Rural Outreach Committee in 2009 to improve outreach and communications with rural communities and Alaska Native entities and develop a method for systematic documentation of Alaska Native and community participation in the development of fishery management actions. The Committee is to advise the Council on how to provide opportunities for better understanding and participation from Alaska Native and rural communities; to provide feedback on community impacts sections of specific analyses, if requested; and to provide recommendations regarding which proposed Council actions need a specific outreach plan and prioritize multiple actions when necessary. Initial priorities of the Committee included salmon PSC reduction<sup>141</sup>.

The Western Alaska Community Development Quota (CDQ)<sup>142</sup> Program was created by the NPFMC in 1992 to provide western Alaska communities an opportunity to participate in the BSAI fisheries that had been foreclosed to them because of the high capital investment needed to enter the fishery. The CDQ Program allocates a percentage of all Bering Sea and Aleutian Islands quotas for groundfish, prohibited species, halibut, and crab to eligible communities. The purpose of the CDQ Program is (i) to provide eligible western Alaska villages with the opportunity to participate and invest in fisheries in the Bering Sea and Aleutian Islands Management Area; (ii) to support economic development in western Alaska; (iii) to alleviate poverty and provide economic and social benefits for residents of western Alaska; and (iv) to achieve sustainable and

<sup>141</sup> <http://www.npfmc.org/committees/rural-outreach-committee/>

<sup>142</sup> <http://www.npfmc.org/community-development-program/>

diversified local economies in western Alaska. There are approximately 65 communities within a fifty-mile radius of the BS coastline who participate in the program.

Advisory Committees (AC) are local “grass roots” citizen groups intended to provide a local voice for the collection and expression of public opinions and recommendations on matters relating to the management of fish and wildlife resources in Alaska. ADF&G staff regularly attends the AC meetings in their respective geographic areas to provide information to the public and hear local opinions on fisheries related activities. Currently, there are 84 advisory committees in the state. Of these, approximately 80% to 85% are “active”, meaning they regularly meet, write proposals, comment and attend BOF meetings. The enabling statute for the AC system is AS 16.05.260. Regulations governing the ACs are found in the Alaska Administrative Code (AAC) Title 5, Chapters 96 – 97<sup>143</sup>.

<b>References:</b>	
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<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>
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<sup>143</sup> <http://www.boards.ADF&G.state.ak.us/bbs/what/prps.php>

**Supporting Clause 8.4**

Mechanisms shall be established where excess capacity exists, to reduce capacity to levels commensurate with sustainable use of the resource. Fleet capacity operating in the fishery shall be measured and monitored. States shall maintain, in accordance with recognized international standards and practices, statistical data, updated at regular intervals, on all fishing operations and a record of all authorizations to fish allowed by them.

FAO CCRF (1995) 7.1.8, 7.6.3, 8.1.2, 8.1.3

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b>				
<p>Under the individual fishing quota (IFQ) share program in the Alaskan fishery for sablefish and halibut introduced in 1995, fishing capacity has been significantly reduced. The number and size of fishing vessels involved in Alaskan fisheries is recorded and reported annually by NMFS/AFSC. In the years after IFQ was implemented, there has been a 48% decline in vessels active in the sablefish IFQ fishery.</p>				
<b>Evidence:</b>				
<p>The Alaska Sablefish and Sablefish Individual Fishing Quota (IFQ) Program was adopted by the NPFMC Pacific Fishery Management Council under Amendment 15 to the Bering Sea and Aleutian Islands Fishery Management Plan and Amendment 20 to the Gulf of Alaska Fishery Management Plan in October 1992. The final rule was published in the Federal Register on November 9, 1993. The IFQ is a complex management program authorized by federal regulations<sup>144</sup>. Participation in the IFQ Program is limited to persons that hold Quota Share (QS), although there are several very limited provisions for “leasing” of annual IFQ. QS is a transferable permit that was initially issued to persons who owned or leased vessels that made legal commercial fixed-gear landings of sablefish in the waters off Alaska during 1988-1990. Annually, NMFS issues eligible QS holders an IFQ fishing permit that authorizes participation in the IFQ fisheries. Those to whom IFQ permits are issued may harvest their annual allocation at any time during the eight plus-month IFQ halibut and sablefish seasons.</p> <p>Under the IFQ share program, fishing capacity (vessels and gear) has been significantly reduced. With the implementation of IFQs in the fishery, the derby-style fisheries were eliminated, seasons were extended and wastage was reduced in fishery. The number and size of fishing vessels involved in Alaskan fisheries is recorded and reported annually by NMFS/AFSC. In the years after IFQ was implemented, the number of active sablefish vessels in the IQF program declined from 610 to 315, a decrease of 48% (Fissel et. al 2015). This demonstrates a clear ability to control and reduce capacity as necessary.</p> <p>As noted in Clause 8.1.3, NPFMC and NMFS hosted a workshop in April, 2016 in Anchorage, AK on crew member impacts of the implementation of the halibut and sablefish IFQ program as part of its comprehensive review of the program<sup>145</sup>.</p>				
<b>References:</b>	<p>Fissel, B., M. Dalton, R. Felthoven, B. Garber-Yonts, A. Haynie, A. Himes-Cornell, S. Kasperski, J. Lee, D. Lew, C. Seung. 2015. Stock Assessment and Fishery Evaluation Report for the Groundfish Fisheries of the Gulf of Alaska and Bering Sea/Aleutian Island Area: Economic Status of the Groundfish Fisheries off Alaska, 2014.</p>			

<sup>144</sup><http://www.ecfr.gov/cgi-bin/text-idx?SID=0cc954068b4cef56066a93c0ecbd605f&mc=true&node=pt50.13.679&rgn=div5#sp50.13.679.d>

<sup>145</sup> <http://npfmc.legistar.com/gateway.aspx?M=F&ID=95fe5ec2-18f3-44bc-bcd9-7944aa41fc1b.pdf>



<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>
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**Supporting Clause 8.5**

Technical measures shall be taken into account, where appropriate, in relation to:

- fish size
- mesh size or gear
- closed seasons
- closed areas
- areas reserved for particular (e.g. artisanal) fisheries
- protection of juveniles or spawners

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> NPFMC and NMFS regulations cover the directed sablefish fisheries and deal with seasons, closed areas, allowed fishing gears, subsistence fisheries, and size limits. A number of closure areas have been designated, mainly to protect prohibited species.				
<b>Evidence:</b> A summary of the NPFMC management measures that govern the GOA and BSAI groundfish fisheries are contained in the FMPs (e.g. see Table ES- 2 in the GOA FMP <sup>146</sup> ). These also cover legal definitions such as quota shares, IFQ's, etc. The full suite of NMFS fishery regulations for Alaskan waters can be found on the NMFS website <sup>147</sup> . These regulations cover all aspect of fishing, including seasons, gear limitations, and numerous area closures. There are specific rules laid out for sablefish, permitting the use of trawl gear only in certain areas, as well as regulations on seabird avoidance for vessels fishing with hook-and-line gear. The gear regulations also contain details on mesh sizes permitted, biodegradable panels in pot gears, types of hook and line gear allowed, etc. The use of bottom contact gear is prohibited in the Gulf of Alaska Coral and Alaska Seamount Habitat Protection Areas year-round. Fishing with trawl vessels is not permitted year-round in the Crab and Halibut Protection Zone and the Pribilof Island Habitat Conservation Area. As well, a number of closure zones for trawl gears are described in the NPFMC FMPs for GOA and BSAI.				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

<sup>146</sup> <http://www.npfmc.org/wp-content/PDFdocuments/fmp/GOA/GOAfmp.pdf>

<sup>147</sup> <https://alaskafisheries.noaa.gov/fisheries-679regs>

**Supporting Clause 8.6**

Fishing gear shall be marked in accordance with national legislation in order that the owner of the gear can be identified. Gear marking requirements shall take into account uniform and internationally recognizable gear marking systems.

FAO CCRF (1995) 8.2.4

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> Fishing gear for sablefish is marked in accordance with national legislation in order that the owner of the gear can be identified.				
<b>Evidence:</b> Regulations pertaining to vessel and gear markings in the sablefish fishery are established in NMFS regulations, as prescribed in the annual management measures published in the Federal Register <sup>148</sup> . They state:  (a) Marking of hook-and-line, longline pot, and pot-and-line gear.  (1) All hook-and-line, longline pot, and pot-and line marker buoys carried on board or used by any vessel regulated under this part shall be marked with the vessel’s Federal fisheries permit number or ADF&G vessel registration number.  (2) Markings shall be in characters at least 4 inches (10.16 cm) in height and 0.5 inch (1.27 cm) in width in a contrasting color visible above the water line and shall be maintained so the markings are clearly visible.				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

<sup>148</sup> <https://alaskafisheries.noaa.gov/sites/default/files/679b24.pdf>

**Supporting Clause 8.7**

Measures shall be introduced to identify and protect depleted resources and those resources threatened with depletion, and to facilitate the sustained recovery/restoration of such stocks. Also, efforts shall be made to ensure that resources and habitats critical to the well-being of such resources which have been adversely affected by fishing or other human activities are restored.

FAO CCRF (1995) 7.6.10  
 FAO Eco (2009) 30

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

The US laws governing the sablefish fishery under NPFMC/NFMS are fully consistent with and supportive of a number of international laws and agreements related to fisheries management, such as the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, the UN Straddling and Highly Migratory Fish Stocks Agreement, and the Convention on Biological Diversity. NPFMC uses a precautionary harvest control rule in its management approach which is aimed at preventing overfishing of the resource and allowing stock rebuilding when necessary. The main fishing gear used to capture sablefish in Alaskan waters is longline, which has a relatively low impact on seabed habitat. Pots and trawls are also used, but to a lesser extent.

**Evidence:**

The US laws governing the sablefish fishery are fully consistent with and supportive of a number of international laws and agreements related to fisheries management, such as the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, the UN Straddling and Highly Migratory Fish Stocks Agreement, and the Convention on Biological Diversity.

NPFMC states<sup>149</sup> that it will carry out its objectives by considering reasonable, adaptive management measures, as described in the Magnuson-Stevens Act and in conformance with the National Standards, the Endangered Species Act, the National Environmental Policy Act, and other applicable law. This management approach takes into account the National Academy of Science’s recommendations on Sustainable Fisheries Policy.

As noted in previous clauses, NPFMC uses a precautionary harvest control rule in its management approach which is aimed at preventing overfishing of the resource and allowing stock rebuilding if/when necessary. The main fishing gear used to capture sablefish is longline, which has relatively low impact on seabed habitat. By-catches are carefully managed, and include PSC limits for several species, including halibut and tanner crab. Federal and state regulations<sup>150, 151</sup> define pot gear for all groundfish (i.e., there is no distinction between pot gear for different species such as Pacific cod or sablefish). Each groundfish pot must comply with a number of specifications, including use of a biodegradable panel, and tunnel openings (rigid or soft) which must not exceed maximum dimensions. When the pots are retrieved, fish are sorted on deck and non-target catch is returned to the sea.

<sup>149</sup> <http://www.npfmc.org/wp-content/PDFdocuments/fmp/GOA/GOAfmfp.pdf>

<sup>150</sup> <https://alaskafisheries.noaa.gov/regs/679a2.pdf>

<sup>151</sup> [http://www.legis.state.ak.us/basis/folioiproxy.asp?url=http://www.jnu01.legis.state.ak.us/cgi-bin/folioisa.dll/aac/query=\[JUMP:%275+aac+28!2E050%27\]/doc/{@1}?firsthit](http://www.legis.state.ak.us/basis/folioiproxy.asp?url=http://www.jnu01.legis.state.ak.us/cgi-bin/folioisa.dll/aac/query=[JUMP:%275+aac+28!2E050%27]/doc/{@1}?firsthit)

By regulation, there is no directed trawl fishery for sablefish, but they are taken as by-catch in several trawl fisheries, including rockfish. The bottom trawl gear in the BSAI has been modified (regulation effective January 20th 2011, see Amendment 94 to the BSAI FMP) to have elevating devices (bobbins) which have been shown to reduce the impact on both the seafloor (up to 90%) and the associated non-target invertebrates (e.g. king crabs). Effective from February 18th 2014, Amendment 89 to the GOA groundfish FMP, revised regulations have been in place governing the configuration of modified nonpelagic trawl gear. This rule requires that nonpelagic trawl gear used in the directed flatfish fisheries in the Central Regulatory Area of the GOA be modified to raise portions of the gear off the sea floor, in the same manner as established in the BSAI three years earlier.<sup>152, 153</sup> The modifications to nonpelagic trawl gear used in these fisheries will reduce the unobserved injury and mortality of Tanner crab, and will reduce the potential adverse impacts of nonpelagic trawl gear on bottom habitat. Finally, this rule makes a minor technical revision to the modified nonpelagic trawl gear construction regulations to facilitate gear construction for those vessels required to use modified nonpelagic trawl gear in the GOA and Bering Sea groundfish fisheries.

The NMFS and the ADFG have well-established regulations on fishing seasons and legal gear use. Discards of sablefish tend to be small and these are accounted for toward the overall TAC by observer data. Management measures and operational methods (i.e. Maximum Retainable Amounts and Prohibited Species Catch) are in place to account for bycatch and discards of encountered bycatch species. The trawl fishery operates under strict MRAs for sablefish.

**References:**

**Non-Conformance Number (if relevant)**

**NA**

<sup>152</sup> North Pacific Fisheries Management Council Fisheries Management Plans <http://www.npfmc.org/fishery-management-plans/>

<sup>153</sup> Federal Register Amendment 89 to the Gulf of Alaska Groundfish Fishery Management Plan Area Closures for *Chionoecetes bairdi* Crab Protection in Gulf of Alaska Groundfish Fisheries <https://www.federalregister.gov/regulations/0648-BB76/amendment-89-to-the-gulf-of-alaska-groundfish-fishery-management-plan-area-closures-for-chionoecetes>

**Supporting Clause 8.8**

States and relevant groups from the fishing industry shall measure performance and encourage the development, implementation and use of selective, environmentally safe and cost effective gear, technologies and techniques that sufficiently selective as to minimize catch, waste and discards of non-target species - both fish and non-fish species and impacts on associated or dependent species. The use of fishing gear and practices that lead to the discarding of catch shall be discouraged and the use of fishing gear and practices that increase survival rates of escaping fish shall be promoted. Inconsistent methods, practices and gears shall be phased out accordingly.

FAO CCRF (1995) 7.2.2, 7.6.4, 7.6.9, 8.4.5, 8.5.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

Only about 10% of the total catch of sablefish is taken by trawls. The groundfish trawl industry deploys halibut excluder devices in their gear to eliminate or reduce halibut bycatch. Exempted Fishing Permits have been granted by NMFS to some trawler fleets in Alaskan waters in 2016 to allow halibut deck sorting experiments, with the aim of reducing halibut (PSC) mortality in these fisheries. Vessels fishing longline gear for sablefish in Alaska are required by NMFS regulation to use streamer lines to avoid seabird bycatch. The reduction in the number of vessels and amount of gear following introduction of IFQs has likely resulted in reduced impact to the sea bottom. NMFS has a national by-catch reduction strategy focused on several key areas. Performance of fishing gears used for sablefish is monitored and reviewed regularly.

**Evidence:**

The longline fishery for sablefish catches mostly medium to large fish which are typically mature. Length frequencies from the BSAI pot fishery are similar to the longline fishery. The trawl fishery, which accounts for only about 10% of the catch on average, often catches slightly smaller fish (Hanselman et al. 2015). The shift from an open-access to IFQ in the sablefish fishery has reduced the number of hooks deployed, and therefore has likely reduced the benthic impact.

The groundfish trawl industry in Alaska deploys halibut excluder devices in their gear, reducing the by-catch of halibut, which is treated as a prohibited species catch (PSC) and managed with strict limits. Exempted Fishing Permits (EFPs) have been granted by NMFS to some trawler fleets in Alaskan waters in 2016 to allow halibut deck sorting experiments, with the aim of reducing halibut mortality on fish required under PSC limits to be returned to the sea. The program requires observer coverage and electronic video monitoring on all vessels, and is supported by previous scientific study (Gauvin 2012). An example of an EFP for this fishery can be found here<sup>154</sup>.

In certain trawl fisheries in the Bering Sea and the central Gulf of Alaska that take sablefish as by-catch (e.g. some flatfish fisheries), a trawl sweep gear modification has been required by NPFMC<sup>155</sup>. Elevating devices (e.g., discs or bobbins) are required to be used on the trawl sweeps, to raise the sweeps off the seabed and limit adverse impacts of trawling on the seafloor.

<sup>154</sup> <https://alaskafisheries.noaa.gov/sites/default/files/efp2016-01-050616permit.pdf>

<sup>155</sup> <http://www.npfmc.org/habitat-protections/gear-modifications/>

Groundfish pots (including longline pots) used to catch sablefish and other species in Alaskan waters are required to comply with a number of specifications, including use of a biodegradable panel, and tunnel openings (rigid or soft) which must not exceed maximum dimensions. These gear constructions minimize impacts of ghost fishing and of catch of certain non-target species and sizes.

Vessels fishing longline gear in Alaskan waters (e.g. IFQ sablefish) are required by NMFS regulation<sup>156</sup> to take measures to avoid seabird bycatch. Such measures include the use of streamer lines (Melvin 2000), as well as using hooks that when baited, sink as soon as they are put in the water.

NMFS has a National Bycatch Reduction Strategy<sup>157</sup>, which is intended to guide and coordinate efforts to reduce bycatch and bycatch mortality in the coming years. Key areas of focus include:

- monitor and estimate the rates of bycatch and bycatch mortality in fisheries to understand the level of impact and the nature of the interaction;
- research to improve estimates of bycatch rates, better understand the impacts of bycatch on species interactions and community dynamics, modify fishing gear, and develop mitigation tools to minimize bycatch and its impacts;
- develop and implement domestic management measures and promote the adoption and implementation of international measures to address bycatch and its impacts;
- evaluate the effectiveness of science and management programs to determine whether programs achieve stated goals and identify needed improvements;
- enforce fishery management measures and work with state, federal, and international partners to ensure compliance with all applicable laws;
- communicate with agencies and stakeholders to maximize the impact of bycatch reduction efforts.

Since the introduction of this strategy in 2003, NMFS has worked with the regional fishery management councils such as NPFMC to develop and implement robust management measures to minimize bycatch, including time and area closures. Bycatch reduction technologies and devices have been developed and are used in active fishing gears in sablefish fisheries in Alaska, as documented above. Other initiatives that have been implemented include supporting the Bycatch Reduction Engineering Program, and implementing and improving observer programs to record at-sea bycatch. In addition, the 2007 MSA reauthorization created new requirements for bycatch minimization, and this National Bycatch Reduction Strategy reflects current efforts and ensures that its programs are aligned with current and emerging priorities.

The performance of various fishing gears is regularly monitored by industry participants, fishery observers, NMFS and ADF&G authorities, and NPFMC. Various by-catch, MRA, and PSC measures, including a variety of gear performance regulations have been introduced in many Alaskan fisheries, and the bycatch of sablefish in trawl fisheries is strictly controlled by MRAs, which are monitored closely. NPFMC focuses on several areas of by-catch reduction which have relevance to sablefish in Alaska, including measures for pots and trawls specifically<sup>158</sup>. They also host and participate in numerous workshops and meetings where bycatch reduction and gear performance are regularly discussed, and often lead to gear modifications and improvements being implemented under NMFS regulation.<sup>159</sup>

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<sup>156</sup> <https://alaskafisheries.noaa.gov/sites/default/files/679b24.pdf>.

<sup>157</sup> <http://npfmc.legistar.com/gateway.aspx?M=F&ID=a6ea1d59-1038-4f85-89ce-29f3dddafa11.pdf>

<sup>158</sup> <http://www.npfmc.org/wp-content/PDFdocuments/bycatch/Bycatchflyer913.pdf>

<sup>159</sup> <http://www.npfmc.org/goa-trawl-bycatch-management/>

<p><b>References:</b></p>	<p>Gauvin, J. 2013. Final Report on EFP 12-01: Halibut deck sorting experiment to reduce halibut mortality on Amendment 80 Catcher Processors. Alaska Seafood Cooperative. <a href="https://alaskafisheries.noaa.gov/sites/default/files/efp12-01halibut_a80.pdf">https://alaskafisheries.noaa.gov/sites/default/files/efp12-01halibut_a80.pdf</a></p> <p>Hanselman, D.H., C. Lunsford, and C. Rodgveller. 2015. Assessment of the sablefish stock in Alaska. Stock Assessment and Fishery Evaluation Reports for the Groundfish Resources of the Bering Sea/Aleutian Islands and Gulf of Alaska Regions. North Pacific Fishery Management Council, Anchorage, AK 99501. p. 297-414.</p> <p>Melvin, E.F. 2000. Streamer Lines to Reduce Seabird Bycatch Reduce Seabird Bycatch in Longline Fisheries in Longline Fisheries. Washington Sea Grant Program, University of Washington. <a href="https://wsg.washington.edu/wordpress/wp-content/uploads/publications/Streamer-Lines-Reduce-Seabird-Bycatch-Longliners.pdf">https://wsg.washington.edu/wordpress/wp-content/uploads/publications/Streamer-Lines-Reduce-Seabird-Bycatch-Longliners.pdf</a></p>
<p><b>Non-Conformance Number (if relevant)</b></p>	<p><b>NA</b></p>



**Supporting Clause 8.9**

Technologies, materials and operational methods or measures including, to the extent practicable, the development and use of selective, environmentally safe and cost effective fishing gear and techniques shall be applied to minimize the loss of fishing gear, the ghost fishing effects of lost or abandoned fishing gear, pollution and waste.

FAO CCRF (1995) 7.2.2, 8.4.6, 8.4.1

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> Use of longline gear in the sablefish fisheries substantially reduces the impact on bottom habitats and bycatch of many species. Longline is not associated with as much ghost fishing as some other fishing gears. No directed fishing with trawls occurs for sablefish, and pots used for sablefish are required to contain a biodegradable panel to reduce or eliminate ghost fishing in this gear.				
<b>Evidence:</b> Use of longline gear in the sablefish fisheries substantially reduces the impact on bottom habitats and bycatch of many bottom dwelling species. Longline is typically not associated with as much ghost fishing as some other fishing gears, such as gillnets and some types of traps (NOAA 2015). Clause 12.3 contains more information on the main bycatch species taken in the sablefish fisheries. The previous clause contains information on several measures aimed at reducing bycatch/waste and improving the selectivity of fisheries for sablefish. NMFS regulations requires that each pot used to fish for sablefish be equipped with a biodegradable panel at least 18 inches (45.72 cm) in length and sewn up with untreated cotton thread, the effects of which reduce the ability of lost sablefish pots to ghost-fish.				
<b>References:</b>	NOAA Marine Debris Program. 2015. Report on the impacts of “ghost fishing” via derelict fishing gear. Silver Spring, MD. 25 pp <a href="https://marinedebris.noaa.gov/sites/default/files/publications-files/Ghostfishing_DFG.pdf">https://marinedebris.noaa.gov/sites/default/files/publications-files/Ghostfishing_DFG.pdf</a>			
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 8.10**

The intent of fishing selectivity and fishing impacts related regulations shall not be circumvented by technical devices and information on new developments and requirements shall be made available to all fishers.

FAO CCRF (1995) 8.5.1

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> There is no evidence that regulations involving gear selectivity are being circumvented either by omission, or through the illegal use of gear technology. Advancements or developments in gear are made widely available to fishers through websites and public meetings and other forms of communication.				
<b>Evidence:</b> Information on gear regulations, including any and all amendments or modifications, as well as on gear technology is readily available to fishers and the general public through the websites of NPFMC, NOAA/NMFS, and IPHC (for sablefish longline fishers who also fish for halibut), and through various meetings, mailouts, etc. Fishing gear is regulated and monitored through these agencies, and data on compliance is recorded and published. There is no evidence that regulations involving gear selectivity are being circumvented either directly by omission, or through the use of gear technology.				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 8.11**

Assessment and scientific evaluation shall be carried out on the implications of habitat disturbance impact on the fisheries and ecosystems prior to the introduction on a commercial scale of new fishing gear, methods and operations. Accordingly, the effects of such introductions shall be monitored.

FAO CCRF (1995) 8.4.7, 12.11

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> New fishing gears are seldom introduced into this fishery. A recent example (allowing pot gear in GOA, and retention of halibut in sablefish pots and traps) was extensively reviewed by NPFMC, and will be reviewed 3 years after implementation.				
<b>Evidence:</b> New fishing gears have seldom been allowed for sablefish fishing, where the fishery is long established and longline is the dominant/preferred method of capture. In 2015, the North Pacific Fishery Management Council (NPFMC) recommended that the Secretary of Commerce approve regulations to allow the use of longline pot gear in the Gulf of Alaska (GOA) sablefish IFQ fishery, largely to counteract whale depredation in these fisheries, and this is progressing through the regulatory process. At present, pots are allowed in BSAI but not in GOA. A review on the effects of allowing GOA Sablefish longline pot gear will be conducted 3 years after implementation and NMFS is to include pot gear effort in their management report to NPFMC. Before the recent proposal to allow a small number of BSAI fishers using sablefish pots and traps to retain halibut, a comprehensive review was conducted within NPFMC, which included extensive dialogue between NPFMC and IPHC <sup>160</sup> .				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>	

<sup>160</sup> <http://npfmc.legistar.com/gateway.aspx?M=F&ID=7d531a12-e2df-4f1c-b22f-29df93f5422a.pdf>

**Supporting Clause 8.12**

International cooperation shall be encouraged with respect to research programs for fishing gear selectivity and fishing methods and strategies, dissemination of the results of such research programs and the transfer of technology.

FAO CCRF (1995) 8.5.4

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> The fishery for sablefish in Alaska is conducted by US vessels only. In adjacent waters (British Columbia) cooperation on sablefish research and management between Canada and USA, including studies on hook selectivity, occurs as part of the management process. Sablefish catches in other transboundary areas are negligible.				
<b>Evidence:</b> The Alaskan fishery for sablefish is conducted exclusively by US vessels. In the Canadian EEZ, the sablefish fishery is managed by Canadian authorities (DFO). Where possible, authorities from both nations cooperate on sablefish research science and management. Many Alaskan sablefish fishers are also halibut fishers under the IFQ program, and cooperation on halibut research and management between Canada and USA occurs as part of the IPHC process. This includes IPHC research on hook size and selectivity in longline fisheries affecting both sablefish and halibut <sup>161</sup> which applies to USA and Canadian fisheries, and is disseminated through IPHC. Sablefish catches in adjacent Russian waters are at negligible levels in recent years.  Management strategy simulations <sup>162</sup> conducted by Canadian scientists on the sablefish stock in Canadian waters recognize the importance of assumptions about gear selectivity and possible movement of sablefish among management jurisdictions.				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>	

<sup>161</sup> <http://www.iphc.int/papers/gear.pdf>

<sup>162</sup> <http://www.dfo-mpo.gc.ca/Library/344257.pdf>

**Supporting Clause 8.13**

States and relevant institutions involved in the fishery shall collaborate in developing standard methodologies for research into fishing gear selectivity, fishing methods and strategies, and on the behavior of target and non-target species in relation to such fishing gear as an aid for management decisions and with a view to minimizing non-utilized catches.

FAO CCRF (1995) 8.5.3/12.10

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> There are numerous measures implemented in Alaskan fisheries to minimize non-utilized catches, such use as of halibut excluder devices in groundfish trawl gear and use of streamers on longline gear to reduce seabird bycatch. Many of the studies and subsequent implementation have involved cooperative efforts between researchers at institutions in NMFS, DFO, IPHC, universities, and industry, and are introduced into regulations only after extensive testing has occurred.				
<b>Evidence:</b> As noted in Clause 8.8, there are a number of measures implemented in the fishery to minimize non-utilized catches. These include deployment of halibut excluder devices in groundfish trawl gear, use of streamers on longline gear to reduce seabird bycatch, deck sorting to improve survival of live fish returned to the sea, work on hook selectivity and efficiency, and proposals to allow retention of halibut in sablefish pots. These measures are typically implemented following rigorous scientific study and periods of allowed experimental fishing to test their effectiveness. Many of the studies and subsequent implementation have involved cooperative efforts between researchers at institutions in NMFS, DFO, IPHC, universities, and industry.				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 8.14**

Policies shall be developed for increasing stock populations and enhancing fishing opportunities through the use of artificial structures. States shall ensure that, when selecting the materials to be used in the creation of artificial reefs as well as when selecting the geographical location of such artificial reefs, the provisions of relevant international conventions concerning the environment and the safety of navigation are observed.

FAO CCRF (1995) 8.11.1, 8.11.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> There is no evidence to suggest that either sablefish, or species with similar biological characteristics, have benefitted from the use of artificial structures. The use of artificial structures is neither practical nor appropriate for sablefish; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>Evidence:</b> There is no use of artificial structures for the benefit of the north Eastern Pacific sablefish stock; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**7.9. Fundamental Clause 9**

Fishing operations shall be carried out by fishers with appropriate standards of competence in accordance with international standards and guidelines and regulations.

FAO CCRF (1995) 8.1.7/8.1.10/8.2.4/8.4.5

<b>No. Supporting clauses/sub-clauses</b>	3
<b>Supporting clauses applicable</b>	3
<b>Supporting clauses not applicable</b>	0
<b>Non-conformances</b>	

**Supporting Clause 9.1**

States shall enhance through education and training programs the education and skills of fishers and, where appropriate, their professional qualifications. Such programs shall take into account agreed international standards and guidelines.

FAO CCRF (1995) 8.1.7/8.4.1

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

Fishers applying for sablefish QS or IFQ must have 150 days experience working as an IFQ crewmember. There are a number of training facilities in Alaska which offer various training programs to fishers, including courses on safety and navigation. University of Alaska provides training in the form of seminars and workshops, and conducts sessions of their Alaska Young Fishermen’s Summit at regular intervals.

**Evidence:**

Any aspirant sablefish fisher must have 150 days of IFQ crewmember fishing experience before being able to receive QS or IFQ under NMFS/NOAA rules. Obtaining IFQ share most often will require the purchaser (aspirant sablefish fisher) to enter into loan capital arrangements with banks that will require comprehensive fishing business plans supported by competent, professional fishers with demonstrable fishing experience. This competence and professionalism is a learned experience with the culmination of entrants into the fishery starting at deck hand level working their way up through proof of competence<sup>163</sup>.

The State of Alaska, Department of Labor & Workforce Development (ADLWD) includes AVTEC (formerly called Alaska Vocational Training & Education Center, now called Alaska’s Institute of Technology). One of AVTEC’s main divisions is the Alaska Maritime Training Center. The goal of the Alaska Maritime Training Center is to promote safe marine operations by effectively preparing captains and crewmembers for employment in the Alaskan maritime industry<sup>164</sup>. This center is a United States Coast Guard (USCG) approved training facility located in Seward, Alaska, and offers USCG/STCW-compliant maritime training (STCW is the international Standards of Training, Certification, & Watchkeeping). In addition to the standard courses offered, customized training is available to meet the specific needs of maritime companies. Courses are delivered through the use

<sup>163</sup> [http://www.nmfs.noaa.gov/sfa/management/catch\\_shares/about/documents/ak\\_halibut\\_sablefish.pdf](http://www.nmfs.noaa.gov/sfa/management/catch_shares/about/documents/ak_halibut_sablefish.pdf)

<sup>164</sup> <http://www.avtec.edu/>

of their ship simulator, computer based navigational laboratory, and modern classrooms. The Center’s mission is to provide Alaskans with the skills and technical knowledge to enable them to be productive in Alaska’s maritime industry. Supplemental to their on-campus classroom training, the Alaska Maritime Training Center has a partnership with the Maritime Learning System to provide mariners with online training for entry-level USCG Licenses, endorsements, and renewals.

The University of Alaska Sea Grant Marine Advisory Program (MAP)<sup>165</sup> provides education and training in several sectors, including fisheries management, in the forms of seminars and workshops. In addition, MAP conducts sessions of their Alaska Young Fishermen’s Summit (AYFS). Each Summit is an intense, 2/3-day course in all aspects of Alaska fisheries, from fisheries management & regulation, to seafood markets & marketing. The target audience for these Summits is young Alaskans from coastal communities. The 2013 AYFS<sup>166</sup> was held in Anchorage and the 2016 AYFS<sup>167</sup> was held in January in Juneau. The 2016 conference focus was on building leadership and networking capacity in the Alaska commercial fishing industry.

The Alaska Marine Safety Education Association (AMSEA)<sup>168</sup> provides courses on small boating safety, drill conductor training, stability and damage control, ergonomics, dredger safety and survival at sea training.

Mainly through face to face meetings and various organized events, Alaska Enforcement Division (AKD) of NOAA Fisheries Office of Law Enforcement (OLE) reaches out to many Alaskan fish harvesters and industry personnel, providing current regulatory information and guidance to promote compliance and responsible fisheries.

<b>References:</b>	
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<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>
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<sup>165</sup> <http://seagrant.uaf.edu/map/fisheries/>  
<sup>166</sup> <https://seagrant.uaf.edu/map/workshops/2013/ayfs/>  
<sup>167</sup> <https://seagrant.uaf.edu/map/workshops/2016/ayfs/index.php>  
<sup>168</sup> <http://www.amsea.org/>



**Supporting Clause 9.2**

States, with the assistance of relevant international organizations, shall endeavor to ensure through education and training that all those engaged in fishing operations be given information on the most important provisions of the FAO CCRF (1995), as well as provisions of relevant international conventions and applicable environmental and other standards that are essential to ensure responsible fishing operations.

FAO CCRF (1995) 8.1.10

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> All regulations governing the sablefish fisheries are available on the NPFMC and NMFS websites, and the results of any changes are widely discussed and communicated. AKD engages in outreach to fishers and industry personnel, providing current regulatory information and guidance to promote compliance and responsible fisheries.				
<b>Evidence:</b> To increase communications and understanding between the regulated users and enforcement personnel and to minimize harm to fishery resources, the Alaska Enforcement Division (AKD) of NOAA Fisheries Office of Law Enforcement (OLE) strives to maintain a positive and productive relationship with all harvesters and industry personnel. In addition to daily personal interactions on the water, docks, and in processing facilities, AKD contacts thousands of harvesters and industry personnel at organized events, including trade shows, and responds to email and telephone inquiries, providing current regulatory information and guidance to promote compliance and responsible fisheries.  All regulations governing the sablefish fisheries are available on the NPFMC and NMFS websites, as previously documented. Changes to regulations are considered only after detailed and rigorous processes which include open and public discussions, and the results of any changes are widely communicated.				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 9.3**

States shall, as appropriate, maintain records of fishers which shall, whenever possible, contain information on their service and qualifications, including certificates of competency, in accordance with their national laws.

FAO CCRF (1995) 8.1.8

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> Data on fishers is held in a number of agencies, including AKFIN and CFEC. Some of the information is confidential, while a substantial amount is published in summary form annually.				
<b>Evidence:</b> Any aspirant sablefish fisher must have demonstrated 150 days of sablefish fishing experience before being able to purchase IFQs. Competence and professionalism is typically a learned experience, with the entrants into the fishery usually starting at deck hand level working their way up <sup>169</sup> . Annually, NMFS issues eligible Quota Shareholders an IFQ fishing permit that authorizes participation in the IFQ fisheries for sablefish and halibut.  Detailed data on the number and location of Alaskan fishers, vessels, permits issued, etc. can be found in Fissel et al. 2015. These authors note that certain information on Alaskan fisheries has been compiled through the Alaska Fisheries Information Network (AKFIN) <sup>170</sup> , although selected studies may not be publicly available as some information is confidential. The Alaskan fishing fleet, including sablefish vessels, was profiled by AKFIN in a document from 2012 <sup>171</sup> .  Data on fishing in Alaskan state-managed fisheries can be found in the State of Alaska’s Commercial Fisheries Entry Commission website <sup>172</sup> . Fishermen in the state-managed fisheries must register prior to fishing and are required to keep a logbook during the fishery. Completed logbook pages must be attached to the ADF&G copy of the fish ticket at the time of delivery.				
<b>References:</b>	Fissel, B., M. Dalton, R. Felthoven, B. Garber-Yonts, A. Haynie, A. Himes-Cornell, S. Kasperski, J. Lee, D. Lew, C. Seung. 2015. Stock Assessment and Fishery Evaluation Report for the Groundfish Fisheries of the Gulf of Alaska and Bering Sea/Aleutian Island Area: Economic Status of the Groundfish Fisheries off Alaska, 2014.			
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

<sup>169</sup> [http://www.nmfs.noaa.gov/sfa/management/catch\\_shares/about/documents/ak\\_halibut\\_sablefish.pdf](http://www.nmfs.noaa.gov/sfa/management/catch_shares/about/documents/ak_halibut_sablefish.pdf)

<sup>170</sup> <http://www.akfin.org/home/>

<sup>171</sup> [http://www.akfin.org/wp-content/uploads/2013/09/Fishery\\_Fleet\\_Profile2012\\_Addendum.pdf](http://www.akfin.org/wp-content/uploads/2013/09/Fishery_Fleet_Profile2012_Addendum.pdf)

<sup>172</sup> [https://www.cfec.state.ak.us/fishery\\_statistics/earnings.htm](https://www.cfec.state.ak.us/fishery_statistics/earnings.htm)

## Section E: Implementation, Monitoring and Control

### 7.10. Fundamental Clause 10

An effective legal and administrative framework shall be established and compliance ensured through effective mechanisms for monitoring, surveillance, control and enforcement for all fishing activities within the jurisdiction.

FAO CCRF (1995) 7.1.7/7.7.3/7.6.2/8.1.1/8.1.4/8.2.1  
 FAO ECO (2009) 29.5  
 FAO Eco (2011) 36.6

<b>No. Supporting clauses/sub-clauses</b>	6
<b>Supporting clauses applicable</b>	4
<b>Supporting clauses not applicable</b>	2
<b>Non-Conformances</b>	0

#### Supporting Clause 10.1

Effective mechanisms shall be established for fisheries monitoring, surveillance, control and enforcement measures including, where appropriate, observer programs, inspection schemes and vessel monitoring systems, to ensure compliance with the conservation and management measures for the fishery in question. This could include relevant traditional, fisher or community approaches, provided their performance could be objectively verified.

FAO CCRF (1995) 7.1.7 Others 7.7.3/8.1.1  
 FAO Eco (2009) 29.5  
 FAO Eco (2011) 36.6

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

The Magnuson Stevens Act governs the sablefish fisheries in the U.S. The U.S. Coast Guard (USCG) and NMFS Office of Law Enforcement (OLE) enforce Alaska fisheries laws and regulations, especially 50CFR679. The Alaska Wildlife Troopers enforce sablefish regulations in state waters. The violations in this fishery are reported to and investigated by NOAA’s Office of Law Enforcement’s Alaska Division and prosecuted by NOAA’s Office of General Counsel’s Enforcement Section. OLE Special Agents and Enforcement Officers conduct complex criminal and civil investigations, board vessels fishing at sea, inspect fish processing plants, review sales of wildlife products on the internet and conduct patrols on land, in the air and at sea. NOAA Agents and Officers can assess civil penalties directly to the violator in the form of Summary Settlements (SS) or can refer the case to NOAA’s Office of General Counsel for Enforcement and Litigation (GCEL).

**Evidence:**

The Magnuson Stevens Act governs the sablefish fisheries in the U.S. The U.S. Coast Guard (USCG) and NMFS Office of Law Enforcement (OLE) enforce Alaska fisheries laws and regulations, especially 50CFR679. The Alaska Wildlife Troopers enforce sablefish regulations in state waters. The violations in this fishery are reported to and investigated by NOAA’s Office of Law Enforcement’s Alaska Division and prosecuted by NOAA’s Office of General Counsel’s Enforcement Section. OLE Special Agents and Enforcement Officers conduct complex criminal and civil investigations, board vessels fishing at sea, inspect fish processing plants,

review sales of wildlife products on the internet and conduct patrols on land, in the air and at sea. NOAA Agents and Officers can assess civil penalties directly to the violator in the form of Summary Settlements (SS) or can refer the case to NOAA's Office of General Counsel for Enforcement and Litigation. The U.S. Coast Guard (USCG)<sup>173</sup> and NMFS Office of Law Enforcement (OLE)<sup>174</sup> enforce Alaska fisheries laws and regulations, especially 50CFR679<sup>175</sup>. All landings of sablefish must be reported to NMFS via its mandatory "e-landings" reporting system.

Commercial harvests of pollock, halibut and sablefish are the primary enforcement responsibilities of OLE. In any given year, OLE Agents and Officers spend an average 10,000-11,000 hours conducting patrols and investigations, and an additional 10,000-11,000 hours on outreach activities.

The OLE maintains 19 patrol boats around the country to conduct a variety of patrols including Protected Resources Enforcement Team (PRET) boardings, protection of National Marine Sanctuaries and various undercover operations. These patrol vessels range in size from a 17' Zodiac to the largest 39' Chris Craft.

Working with federally-deputized state marine enforcement agents and the U.S. Coast Guard, the OLE is able to garner even more patrol hours. Although the OLE continues to expand our cooperation with a variety of other agencies, the U.S. Coast Guard remains the OLE's closest partner in the protection of Federal fisheries.

The Individual Fishing Quota (IFQ), Observer and Record Keeping/Reporting programs are the foundations of the Alaska Division program responsibilities. Endangered Species Act and Marine Mammal Protection Act priorities include the Steller sea lion and Cook Inlet beluga populations in addition to many other protected resources. Vessel Monitoring is used extensively in Alaska to manage both commercial fishing and the potential jeopardy it may pose to Steller sea lion habitat areas.

In Fiscal Year 2015 alone, NOAA Office of Law Enforcement investigated more than 122 incidents resulting in 15 violations. The bulk of these violations consisted on IFQ and vessel cap overages. This is approximately <1% of the total trips for that year. In recent years, the OLE has also stepped up its presence in the international scene as more and more fish are imported and exported into and out of the United States. While catches are usually seized at the onset of an investigation, violators can also be assessed both civil penalties and criminal fines; and on occasion boats are seized and individuals are sent to Federal prison.

In addition to enforcing legislation for the commercial sablefish fishery, OLE's officers inspect and cross check at landings and processors records for reconciliation.

<b>References:</b>	
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>

<sup>173</sup> <https://www.uscg.mil/d11/cgchalibut/default.asp#cgskipnav>

<sup>174</sup> [http://www.nmfs.noaa.gov/ole/compliance\\_assistance/regions/alaska.html](http://www.nmfs.noaa.gov/ole/compliance_assistance/regions/alaska.html)

<sup>175</sup> <https://alaskafisheries.noaa.gov/fisheries/regs-amds>

**Supporting Clause 10.2**

Fishing vessels shall not be allowed to operate on the resource in question without specific authorization.

FAO CCRF (1995) 7.6.2 Other 8.1.2, 8.2.1

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> All vessels harvesting sablefish must be authorized and permitted to fish, in accordance with federal regulations, 50CFR679. Further, all sablefish harvesting must be conducted in accordance with the NPFMC’s IFQ program.				
<b>Evidence:</b> All vessels harvesting sablefish must be authorized and permitted to fish, in accordance with federal regulations, 50CFR679 <sup>176</sup> . Further, all sablefish harvesting must be conducted in accordance with the NPFMC’s IFQ program <sup>177</sup> .				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

<sup>176</sup> <https://alaskafisheries.noaa.gov/fisheries-679regs>

<sup>177</sup> <https://alaskafisheries.noaa.gov/fisheries/ifq>

**Supporting Clause 10.3**

States involved in the fishery shall, in accordance with international law, within the framework of sub-regional or regional fisheries management organizations or arrangements, cooperate to establish systems for monitoring, control, surveillance and enforcement of applicable measures with respect to fishing operations and related activities in waters outside their national jurisdiction.

FAO CCRF (1995) 8.1.4

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b>				
There is no legal harvesting of sablefish in the Eastern North Pacific waters outside the national jurisdiction of the USA or Canada. Similarly, there is no sablefish harvesting by American vessels in Canadian waters, or by Canadian vessels in American waters. Within the American EEZ off Alaska, sablefish harvesting is monitored and enforced by NMFS OLE, and USCG.				
<b>Evidence:</b>				
There is no legal harvesting of sablefish in the Eastern North Pacific waters outside the national jurisdiction of the USA or Canada <sup>178</sup> . Similarly, there is no sablefish harvesting by American vessels in Canadian waters, or by Canadian vessels in American waters. Within the American EEZ off Alaska, sablefish harvesting is monitored and enforced by NMFS OLE <sup>179</sup> , and USCG <sup>180</sup> .				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

<sup>178</sup> <https://alaskafisheries.noaa.gov/fisheries-679regs>

<sup>179</sup> [www.nmfs.noaa.gov/ole/compliance\\_assistance/regions/alaska.html](http://www.nmfs.noaa.gov/ole/compliance_assistance/regions/alaska.html)

<sup>180</sup> <https://www.uscg.mil/d11/cgchalibut/default.asp#cgskipnav>

**Supporting Clause 10.3.1**

States which are members of or participants in sub-regional or regional fisheries management organizations or arrangements shall implement internationally agreed measures adopted in the framework of such organizations or arrangements and consistent with international law to deter the activities of vessels flying the flag of non-members or non-participants which engage in activities which undermine the effectiveness of conservation and management measures established by such organizations or arrangements. In that respect, Port States shall also proceed, as necessary, to assist other States in achieving the objectives of the FAO CCRF (1995), and should make known to other States details of regulations and measures they have established for this purpose without discrimination for any vessel of any other State.

FAO CCRF (1995) 7.7.5/8.3.1

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input type="checkbox"/>
<b>NA</b> Sablefish fishery is not prosecuted in international waters. The Sablefish fishery takes place entirely and exclusively within domestic waters (USA or Canada).				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 10.4**

Flag States shall ensure that no fishing vessels entitled to fly their flag fish on the high seas or in waters under the jurisdiction of other States unless such vessels have been issued with a Certificate of Registry and have been authorized to fish by the competent authorities. Such vessels shall carry on board the Certificate of Registry and their authorization to fish.

FAO CCRF (1995) 8.2.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> The fishery does not occur in the high seas; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>Evidence:</b> The fishery does not occur in the high seas; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>



**Supporting Clause 10.4.1**

Fishing vessels authorized to fish on the high seas or in waters under the jurisdiction of a State other than the flag State shall be marked in accordance with uniform and internationally recognizable vessel marking systems such as the FAO Standard Specifications and Guidelines for Marking and Identification of Fishing Vessels.

FAO CCRF (1995) 8.2.3

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> The fishery does not occur in the high seas; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>Evidence:</b> The fishery does not occur in the high seas; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

**7.11. Fundamental Clause 11**

There shall be a framework for sanctions for violations and illegal activities of adequate severity to support compliance and discourage violations.

FAO CCRF (1995) 7.7.2/8.2.7

<b>No. Supporting clauses/sub-clauses</b>	3
<b>Supporting clauses applicable</b>	3
<b>Supporting clauses not applicable</b>	0
<b>Non-Conformances</b>	0

**Supporting Clause 11.1**

National laws of adequate severity shall be in place that provide for effective sanctions.

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary of Evidence:</b> The Magnuson Stevens Act governs the sablefish fisheries in the U.S. The U.S. Coast Guard (USCG) and NMFS Office of Law Enforcement (OLE) enforce Alaska fisheries laws and regulations, especially 50CFR679. The Alaska Wildlife Troopers enforce sablefish regulations in state waters. The violations in this fishery are reported to and investigated by NOAA’s Office of Law Enforcement’s Alaska Division and prosecuted by NOAA’s Office of General Counsel’s Enforcement Section.				
<b>Evidence:</b> The Magnuson Stevens Act governs the sablefish fisheries in the U.S. The U.S. Coast Guard (USCG) and NMFS Office of Law Enforcement (OLE) enforce Alaska fisheries laws and regulations, especially 50CFR679. The Alaska Wildlife Troopers enforce sablefish regulations in state waters. The violations in this fishery are reported to and investigated by NOAA’s Office of Law Enforcement’s Alaska Division and prosecuted by NOAA’s Office of General Counsel’s Enforcement Section. OLE Special Agents and Enforcement Officers conduct complex criminal and civil investigations, board vessels fishing at sea, inspect fish processing plants, review sales of wildlife products on the internet and conduct patrols on land, in the air and at sea. NOAA Agents and Officers can assess civil penalties directly to the violator in the form of Summary Settlements (SS) or can refer the case to NOAA’s Office of General Counsel for Enforcement and Litigation (GCEL).				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>	NA			

**Supporting Clause 11.2**

Sanctions applicable in respect of violations and illegal activities shall be adequate in severity to be effective in securing compliance and discouraging violations wherever they occur. Sanctions shall also be in force that affects authorization to fish and/or to serve as masters or officers of a fishing vessel, in the event of non-compliance with conservation and management measures.

FAO CCRF (1995) 7.7.2/8.1.9/8.2.7

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

The Magnuson-Stevens Act (50CFR600.740 Enforcement policy) provides four basic enforcement remedies for violations: 1) Issuance of a citation (a type of warning), usually at the scene of the offense, 2) Assessment by the Administrator of a civil money penalty, 3) for certain violations, judicial forfeiture action against the vessel and its catch, 4) Criminal prosecution of the owner or operator for some offenses. In some cases, the Magnuson-Stevens Act requires permit sanctions following the assessment of a civil penalty or the imposition of a criminal fine. The 2011 Policy for the Assessment of Civil Administrative Penalties and Permit Sanctions issued by NOAA Office of the General Counsel – Enforcement and Litigation, provides guidance for the assessment of civil administrative penalties and permit sanctions under the statutes and regulations enforced by NOAA.

**Evidence:**

The Magnuson Stevens Act governs the sablefish fisheries in the U.S. The violations in this fishery are reported to and investigated by NOAA’s Office of Law Enforcement’s Alaska Division and prosecuted by NOAA’s Office of General Counsel’s Enforcement Section.

The MSA provides four basic enforcement remedies for violations (50CFR600.740 Enforcement policy):

- a. Issuance of a citation, usually at the scene of the offense (see 15 CFR part 904, subpart E).
- b. Assessment by the Administrator of a civil monetary penalty.
- c. For certain violations, judicial forfeiture action against the vessel and its catch.
- d. Criminal prosecution of the owner or operator for some offenses.

In some cases, the MSA requires permit sanctions following the assessment of a civil penalty or the imposition of a criminal fine. In summary, the MSA treats sanctions against the fishing vessel permit to be the carrying out of a purpose separate from that accomplished by civil and criminal penalties against the vessel or its owner or operator.

NOAA’s OLE Agents and Officers can assess civil penalties directly to the violator in the form of Summary Settlements (SS) or can refer the case to NOAA's Office of General Counsel for Enforcement and Litigation (GCEL). GCEL can then assess a civil penalty in the form of a Notice of Permit Sanctions (NOPs) or Notice of Violation and Assessment (NOVAs), or they can refer the case to the U.S. Attorney's Office for criminal proceedings. For perpetual violators or those whose actions have severe impacts upon the resource criminal charges may range from severe monetary fines, boat seizures and/or imprisonment may be levied by the United States Attorney's Office.



## Magnuson-Stevens Penalty Matrix

Harm to the Resource or Regulatory Program, Offense Level	Level of Intent			
	A Unintentional	B Negligent	C Reckless	D Willful
<b>I</b>	Written warning-\$1,000	Written warning-\$1,500	Written warning-\$2,000	Written warning-\$2,500
<b>II</b>	Written warning-\$2,000	\$2,000-\$5,000	\$5,000-\$10,000	\$10,000-\$15,000
<b>III</b>	\$2,000-\$5,000	\$5,000-\$10,000	\$10,000-\$15,000	\$15,000-\$25,000
<b>IV</b>	\$5,000-\$15,000	\$15,000-\$25,000	\$25,000-\$50,000 and permit sanction of 10-20 days*	\$50,000-\$80,000 and permit sanction of 20-60 days*
<b>V</b>	\$15,000-\$25,000	\$25,000-\$50,000 and permit sanction of 10-20 days*	\$50,000-\$80,000 and permit sanction of 20-60 days*	\$60,000-\$100,000 and permit sanction of 60-180 days*
<b>VI</b>	\$25,000-\$50,000	\$50,000-\$80,000 and permit sanction of 20-60 days*	\$60,000-\$100,000 and permit sanction of 60-180 days*	\$100,000-statutory maximum and permit sanction of 1 year-permit revocation*

There are very few repeat offenders. Sanctions include the possibility of temporary or permanent revocation of fishing privileges. Withdrawal or suspension of authorizations to serve as masters or officers of a fishing vessel are also among the enforcement options. Within the USA EEZ, penalties can range up through forfeiture of the catch to forfeiture of the vessel, including financial penalties and prison sentences.

Finally, the cooperation of citizens and industry is cultivated through programs such as AWT's Fish & Wildlife Safeguard program, which encourages the reporting of violations, and "leverages" the range of enforcers.

**References:**

**Non-Conformance Number (if relevant)**

**NA**

**Supporting Clause 11.3**

Flag States shall take enforcement measures in respect of fishing vessels entitled to fly their flag which have been found by them to have contravened applicable conservation and management measures, including, where appropriate, making the contravention of such measures an offence under national legislation.

FAO CCRF (1995) 8.2.7

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

**Summary Evidence:**

The U.S. Coast Guard and NMFS’s OLE enforce the regulations that govern fishing under the IFQ Program. The Alaska Division patrols provide compliance inspections, a visible deterrent to would-be violators, and availability to stakeholders to receive information and guidance. NOAA OLE works closely with the State of Alaska Wildlife Troopers (AWT) and the US Coast Guard to maximize compliance by sharing information, intelligence, knowledge, and resources. The formalized Cooperative Enforcement Agreement and Joint Enforcement Agreement with the Alaska Wildlife Troopers provide the state with federal funding for personnel, equipment, operations, and authorization for State Troopers to enforce federal fishing regulations while engaged in their regular duties.

**Evidence:**

The U.S. Coast Guard and NMFS’s OLE enforce the regulations that govern fishing under the IFQ Program. The Alaska Division patrols provide compliance inspections, a visible deterrent to would-be violators, and availability to stakeholders to receive information and guidance. NOAA OLE works closely with the State of Alaska Wildlife Troopers (AWT) and the US Coast Guard to maximize compliance by sharing information, intelligence, knowledge, and resources. The formalized Cooperative Enforcement Agreement and Joint Enforcement Agreement with the Alaska Wildlife Troopers provide the state with federal funding for personnel, equipment, operations, and authorization for State Troopers to enforce federal fishing regulations while engaged in their regular duties.

**USCG**

The U.S. Coast Guard (USCG) and NMFS Office of Law Enforcement (OLE) enforce Alaska fisheries laws and regulations, especially 50CFR679. The U.S. Coast Guard (USCG) is the lead federal maritime law enforcement agency for enforcing national and international law on the high-seas, outer continental shelf and inland from the U.S. Exclusive Economic Zone (EEZ) to inland waters. The USCG also patrols US waters to reduce foreign poaching, and inspects fishing vessels for compliance with safety requirements. The U.S. Coast Guard now focuses its efforts at sea. Since 2006 NMFS’OLE Alaska Division (AKD) has monitored offloads and provided after-hours surveillance.

IFQ/CDQ sablefish is only permitted to be harvested with hook and line gear, trawl and pots gear. The active fleet size is a difficult number to quantify as IFQ permits are not allocated to a vessel but to an individual, and those individuals may fish on any boat that meets their specific permit size or lower. The USCG works with the NOAA Alaska Region Restricted Access Management (RAM) division to determine the number of vessels that landed IFQ sablefish in the previous year to determine the active fleet size.

IFQ At-Sea and Dockside Effort The USCG eliminated shoreside enforcement in 2006, protecting resources through at-sea boardings. This focus was possible because of OLE AKD’s increased capacity to monitor offloads with their personnel and with the State of Alaska. Historically, shoreside violations detected by the USCG have

consistently been minor and generally administrative. Consequently, the USCG determined that more significant resource protection was possible by at-sea boardings conducted jointly with NOAA.

#### **NMFS OLE**

NOAA Office of Law Enforcement Special Agents and Enforcement Officers perform a variety of tasks associated with the protection and conservation of Alaska's living marine resources. In order to enforce these laws, OLE special agents and enforcement officers use OLE patrol vessels to board vessels fishing at sea, and conduct additional patrols on land, in the air and at sea in conjunction with other local, state and Federal agencies.

In any given year, OLE Agents and Officers spend an average 10,000-11,000 hours conducting patrols and investigations, and an additional 10,000-11,000 hours on outreach activities. The OLE maintains 19 patrol boats around the country to conduct a variety of patrols including Protected Resources Enforcement Team (PRET) boardings, protection of National Marine Sanctuaries and various undercover operations.

OLE Special Agents and Enforcement Officers conduct complex criminal and civil investigations, board vessels fishing at sea, inspect fish processing plants, review sales of wildlife products on the internet and conduct patrols on land, in the air and at sea. NOAA Agents and Officers can assess civil penalties directly to the violator in the form of Summary Settlements (SS) or can refer the case to NOAA's Office of General Counsel for Enforcement and Litigation (GCEL).

GCEL can then assess a civil penalty in the form of a Notice of Permit Sanctions (NOPs) or Notice of Violation and Assessment (NOVAs), or they can refer the case to the U.S. Attorney's Office for criminal proceedings. For perpetual violators or those whose actions have severe impacts upon the resource criminal charges may range from severe monetary fines, boat seizures and/or imprisonment levied by the United States Attorney's Office. All landings of sablefish must be reported to NMFS via its mandatory "e-landings" reporting system.

Commercial harvests of sablefish are the primary enforcement responsibilities of OLE. The Individual Fishing Quota (IFQ) Observer and Record Keeping/Reporting programs are the foundations of the Alaska Division program responsibilities.

#### **AWT**

The Department of Public Safety, Division of Alaska Wildlife Troopers (AWT) is the primary state fish and wildlife resource enforcement agency in the state of Alaska. AWT is the only state enforcement agency with jurisdiction of state and federal lands as well as state waters. AWT also has a Joint Enforcement Agreement (JEA) with NOAA Fisheries Office of Law Enforcement (NOAA/OLE).

AWT has 97 sworn positions stationed throughout Alaska broken into 4 regions. The south-eastern panhandle region is headquartered in Juneau; south central Alaska, including the Kenai Peninsula, Prince William Sound and the north-eastern and the north-western Gulf of Alaska coast is headquartered in Palmer; western Alaska, including the Aleutian chain, Bering Sea and Bristol Bay is headquartered in Kodiak. Interior Alaska is managed from Fairbanks.

Over the last two years the JEA with NOAA/OLE went under some significant changes. Historically, AWT supplemented commissioned trooper patrols with 14 civilian Public Safety Technicians (PST). These positions were primarily funded by the JEA. Currently the JEA now only funds 3 PST positions. The primary function of these PSTs is still conducting dockside monitoring and inspection of commercial fish off-loads. PSTs monitor for both state and federal regulatory requirements, but are not commissioned to take any law enforcement action; they simply report the documented violations to the appropriate agency. The PSTs monitors focus is

not limited to IFQ sablefish; they also monitor other fisheries including rockfish, halibut, pollock, cod and crab fisheries

AWT actively enforces commercial, sport and subsistence sablefish fisheries through vessel patrols, dockside monitoring and other investigative processes. AWT conducts boardings at sea for all three sablefish fisheries; mostly checking for proper licenses, registrations, logbooks, size and limit restrictions. Dockside monitoring focuses on license and registration verification, size requirements, logbooks and accuracy of catch reports. PSTs are the primary resource used to monitor commercial fish off-loads. With the restructuring of the JEA an increased effort was made to monitor sport fish off-loads.

**References:**

**Non-Conformance Number (if relevant)**

**NA**

## Section F: Serious Impacts of the Fishery on the Ecosystem

### 7.12. Fundamental Clause 12

Considerations of fishery interactions and effects on the ecosystem shall be based on best available science, local knowledge where it can be objectively verified and using a risk based management approach for determining most probable adverse impacts. Adverse impacts of the fishery on the ecosystem shall be appropriately assessed and effectively addressed.

FAO CCRF (1995) 7.2.3/8.4.7/8.4.8/12.11  
 FAO ECO (2009) 29.3/31  
 FAO Eco (2011) 41-41.4

<b>No. Supporting clauses/sub-clauses</b>	16
<b>Supporting clauses applicable</b>	16
<b>Supporting clauses not applicable</b>	3
<b>Non-Conformances</b>	1

#### Supporting Clause 12.1

States shall assess the impacts of environmental factors on target stocks and species belonging to the same ecosystem or associated with or dependent upon the target stocks, and assess the relationship among the populations in the ecosystem.

FAO CCRF (1995) 7.2.3

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

Both policy and management explicitly recognize the influence of variable environmental conditions on Sablefish stocks in Alaska. The influences of climatic, oceanographic and ecological factors on sablefish growth and survivorship are considered by NPFMC, NOAA AKFSC during development of management fisheries plans.

**Evidence:**

The impacts of environmental factors on sablefish and other fish or non-fish species associated or dependent upon them have been and are being appropriately assessed by the NOAA AKFSC, NPFMC and ADFG.

**SAFE documents.**

In addition Stock Assessment and Fishery Evaluation (SAFE) documents for BSAI and GOA sablefish summarize ecosystem considerations for the stocks. They include sections for 1) Ecosystem effects on the stock; and 2) Effects of the sablefish fishery on the ecosystem. Since 2003 SAFE documents for BSAI and GOA have also included an annual summary Ecosystem Assessment in the appendix. The primary intent of the assessment is to summarize historical climate and fishing effects of the shelf and slope regions of the eastern BSAI, and GOA, from an ecosystem perspective and to provide an assessment of the possible future effects of climate and fishing on ecosystem structure and function.



SAFE reports also describe results of first-order trophic interactions for sablefish from the ECOPATH model, an ecosystem modeling software package. While prominence of some interactions may be the result of insufficient data, estimation of prey interactions of adult sablefish in the GOA appear reasonable

#### **Ecosystem Considerations.**

The Resource Ecology and Ecosystem Management group at the Alaska Fishery Science Center (AFSC) provides up-to-date ecosystem information and assessments in annual Ecosystem Considerations documents. Since 1995, this document has been prepared in order to provide information about the effects of fishing from an ecosystem perspective, and the effects of environmental change on fish stocks. Since 1999, the section has included information on indicators of ecosystem status and trends, and more ecosystem-based management performance measures. Ecosystems Considerations reviews sablefish stocks as part of the ground fish assessments.

#### **FATE research.**

NOAA also supports the Fisheries And The Environment (FATE) program to ensure the sustainable use of US fishery resources under a changing climate. The focus of FATE is on the development, evaluation, and distribution of leading ecological and performance indicators. In 2010, FATE projects included a study to integrate environmental variables into sablefish recruitment and stock assessment models. See:

In the Path of the Polar Front: Reducing recruitment uncertainty through integration of large scale climate indices within the Alaska sablefish stock assessment PSEIS ecosystem considerations. The Final Programmatic Supplemental Environmental Impact Statement for the Alaska Groundfish Fisheries (PSEIS) (NMFS 2004) provides information about effects of the fishery on the ecosystem and effects of the ecosystem on the groundfish fishery. It evaluates the historical effects of the spatial concentration of the state fishery and regime changes on sablefish stocks.

NOAA AKFSC compared long-term changes in Alaska Sablefish recruitment and growth with long-term changes in climate and stock size (Shotwell et al 2014). It was found that environmental variability—both interdecadal and interannual—is responsible for most of the observed variation in Alaska Sablefish recruitment.

NMFS staff is currently doing research on the climate impacts of density-dependence and fishing on long-term and large-scale changes in recruitment, growth, maturity and distribution of Alaska Sablefish (Shotwell et al 2014, Yasumichi et al 2015, Hanselman et al 2015). Scientists with the NMFS have conducted numerous studies and continue research on the impacts of acidification in the North Pacific Ocean<sup>181</sup>. A research plan has been developed by the Alaska Fisheries Science Center focusing on forecasting fish, shellfish and coral population responses to ocean acidification in the north Pacific Ocean and Bering Sea<sup>182</sup>. On an annual basis there is also a Stock Assessment and Fisheries Evaluation (SAFE) process that looks at a broad set of Ecosystem Considerations prior to the Council setting annual harvest rates and limits<sup>183</sup>. Other research bodies carry out work to obtain information about the ecosystem, status and management of Alaska Sablefish fisheries. Examples include:

#### **North Pacific Research Board (NPRB)<sup>184</sup>**

The NPFB conducts research activities on or relating to the fisheries or marine ecosystems in the North Pacific Ocean, Bering Sea, and Arctic Ocean prioritizing on research efforts designed to address pressing fishery management or marine ecosystem information needs.”

<sup>181</sup> <http://www.afsc.noaa.gov/Publications/ProcRpt/PR2008-07.pdf>

<sup>182</sup> <http://www.afsc.noaa.gov/Quarterly/jas2012/jas12featurelead.htm>

<sup>183</sup> <http://access.afsc.noaa.gov/reem/ecoweb/>

<sup>184</sup> <http://www.nprb.org/>

**Bering Sea Integrated Ecosystem Research Program<sup>185</sup>**

The Bering Sea Integrated Ecosystem Research Program is a \$52 million partnership between the NPRB and the National Science Foundation (NSF) that seeks to understand the impacts of climate change and dynamic sea ice cover on the eastern Bering Sea ecosystem. More than one hundred scientists are engaged in field research and ecosystem modeling to link climate, physical oceanography, plankton, fishes, seabirds, marine mammals, humans, traditional knowledge and economic outcomes to better understand the mechanisms that sustain this highly productive region.

**The Gulf of Alaska Integrated Ecosystem Research Project (IERP)<sup>186</sup>**

The Gulf of Alaska Integrated Ecosystem Research Project (IERP) is a program of the NPRB that seeks to understand how environmental and anthropogenic processes, including climate change, affect trophic levels and dynamic linkages among trophic levels, with emphasis on fish and fisheries, marine mammals, and seabirds within the GOA. Implementation of the GOA IERP is structured around four separately completed components which will link together to form a fully integrated ecosystem study in the Gulf of Alaska. The four components of this program are:

Upper Trophic Level (UTL):

The overall goal of this component focuses on identifying and quantifying the major ecosystem processes that regulate recruitment strength of key groundfish species (arrowtooth flounder, Pacific cod, Pacific ocean perch, sablefish, and walleye pollock) in the GOA. The focus is on a functional group of five predatory fish species that are commercially important and account for most of the predatory fish biomass in the GOA. Taken together they encompass a range of life history strategies and geographic distributions that provide contrast to explore regional ecosystem processes.

The remaining three components are being completed separately and integrated in a post-proposal selection process to ensure achievement of a fully vertical trophic understanding.

Forage Base:

To focus on forage base and resources which influence the productivity of the top level predator(s) chosen. The type, quality and quantity of food, and its timing and location, are critical to understanding higher trophic level responses.

Lower Trophic Level and Physical Oceanography:

To focus on biological and physical oceanographic parameters on which this portion of the ecosystem is based. This includes euphausiids, fish eggs, and larval fishes.

Ecosystem Modeling:

To describe and predict the responses (and variability therein) of this portion of the GOA ecosystem to environmental and anthropogenic processes, including climate change.

**Ecosystem effects on the stock<sup>187</sup>****Prey population trends**

<sup>185</sup> <http://www.nprb.org/bering-sea-project>

<sup>186</sup> <http://gulfofalaska.nprb.org/>

<sup>187</sup> <http://www.afsc.noaa.gov/REFM/Docs/2015/BSAISablefish.pdf>

Young-of-the-year sablefish prey mostly on euphausiids (Sigler et al. 2001) and copepods (Grover and Olla 1990), while juvenile and adult sablefish are opportunistic feeders. Larval sablefish abundance has been linked to copepod abundance and young-of-the-year abundance may be similarly affected by euphausiid abundance because of their apparent dependence on a single species (McFarlane and Beamish 1992). The dependence of larval and young-of-the-year sablefish on a single prey species may be the cause of the observed wide variation in annual sablefish recruitment. No time series is available for copepod and euphausiid abundance, so predictions of sablefish abundance based on this predator-prey relationship are not possible.

Juvenile and adult sablefish feed opportunistically, so diets differ throughout their range. In general, sablefish < 60 cm consume more euphausiids, shrimp, and cephalopods, while sablefish > 60 cm consume more fish (Yang and Nelson 2000). In the GOA, fish constituted 3/4 of the stomach content weight of adult sablefish with the remainder being invertebrates (Yang and Nelson 2000). Of the fish found in the diets of adult sablefish, pollock were the most abundant item while eulachon, capelin, Pacific herring, Pacific cod, Pacific sand lance, and flatfish also were found. Squid were the most important invertebrate and euphausiids and jellyfish were also present. In southeast Alaska, juvenile sablefish also consume juvenile salmon at least during the summer months (Sturdevant et al. 2009). Off the coast of Oregon and California, fish made up 76 percent of the diet (Laidig et al. 1997), while euphausiids dominated the diet off the southwest coast of Vancouver Island (Tanasichuk 1997). Off Vancouver Island, herring and other fish were increasingly important as sablefish size increased; however, the most important prey item was euphausiids. It is unlikely that juvenile and adult sablefish are affected by availability and abundance of individual prey species because they are opportunistic feeders. The only likely way prey could affect growth or survival of juvenile and adult sablefish is by overall changes in ecosystem productivity.

### **Predators/Competitors**

The main juvenile sablefish predators are adult coho and chinook salmon, which prey on young-of-the-year sablefish during their pelagic stage. Sablefish were the fourth most commonly reported prey species in the salmon troll logbook program from 1977 to 1984 (Wing 1985), however the effect of salmon predation on sablefish survival is unknown. The only other fish species reported to prey on sablefish in the GOA is Pacific halibut; however, sablefish comprised less than 1% of their stomach contents (M. Yang, October 14, 1999, NOAA, pers. comm.). Although juvenile sablefish may not be a prominent prey item because of their relatively low and sporadic abundance compared to other prey items, they share residence on the continental shelf with potential predators such as arrowtooth flounder, halibut, Pacific cod, bigmouth sculpin, big skate, and Bering skate, which are the main piscivorous groundfishes in the GOA (Yang et al. 2006). It seems possible that predation of sablefish by other fish is significant to the success of sablefish recruitment even though they are not a common prey item.

Sperm whales are likely a major predator of adult sablefish. Fish are an important part of sperm whale diet in some parts of the world, including the northeastern Pacific Ocean (Kawakami 1980). Fish have appeared in the diets of sperm whales in the eastern AI and GOA. Although fish species were not identified in sperm whale diets in Alaska, sablefish were found in 8.3% of sperm whale stomachs off of California (Kawakami 1980). Sablefish distribution is typically thought to be on the upper continental slope in deeper waters than most groundfish. However, during the first two to three years of their life sablefish inhabit the continental shelf. Length samples from the NMFS bottom trawl survey suggest that the geographic range of juvenile sablefish on the shelf varies dramatically from year to year. In particular, juveniles utilize the Bering Seashelf extensively in some years, while not at all in others (Shotwell et al. 2014). Juvenile sablefish (< 60 cm FL) prey items overlap with the diet of small arrowtooth flounder. On the continental shelf of the GOA, both species consumed euphausiids and shrimp predominantly; these prey are prominent in the diet of many other groundfish species

as well. This diet overlap may cause competition for resources between small sablefish and other groundfish species.

**Changes in the physical environment**

Mass water movements and temperature changes appear related to recruitment success. Above-average recruitment was somewhat more likely with northerly winter currents and much less likely for years when the drift was southerly. Recruitment was above average in 61% of the years when temperature was above average, but was above average in only 25% of the years when temperature was below average. Growth rate of young-of-the-year sablefish is higher in years when recruitment is above average (Sigler et al. 2001). Shotwell et al. (2014) showed that colder than average wintertime sea surface temperatures in the central North Pacific may represent oceanic conditions that create positive recruitment events for sablefish in their early life history.

**References:**

Shotwell, S.K., D.H. Hanselman, and I.M. Belkin. 2014. Toward biophysical synergy: Investigating advection along the Polar Front to identify factors influencing Alaska sablefish recruitment. Deep-Sea Research II. Special Issue, Fronts, Fish and Top Predators. <http://dx.doi.org/10.1016/j.dsr2.2012.08.024>.

Yasumiishi E.S. . Kalei Shotwell, Dana H. Hanselman, Joseph A. Orsi & Emily A. Fergusson(2015) Using Salmon Survey and Commercial Fishery Data to Index Nearshore Rearing Conditions and Recruitment of Alaskan Sablefish, Marine and Coastal Fisheries: Dynamics, Management, and Ecosystem Science, 7:1, 316-324, DOI:10.1080/19425120.2015.1047070

**Non-Conformance Number (if relevant)**

**NA**

**Supporting Clause 12.2**

Adverse environmental impacts on the resources from human activities shall be assessed and, where appropriate, corrected.

FAO CCRF (1995) 7.2.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

The NPFMC and NOAA/NMFS conduct assessments and research related to fishery impacts on ecosystems and habitats and how environmental factors affect the fishery. Findings and conclusions are published in the Ecosystem section of the SAFE document, annual Ecosystem Considerations documents, and the various other research reports. The Essential Fish Habitat Environmental Impact Statement (EFH EIS) (NMFS, 2005) concluded that the benthic longline and fish pot fisheries has minimal or temporary impacts on sablefish habitat while trawl fisheries have substantial long term effects .

Various studies have applied ecosystem models to food webs and impacts of climate change. Sablefish have low discard rates, but it is a major factor on mortality of PSC species and discussions are underway between the agencies to put in place additional regulatory measures to avoid halibut bycatch on sablefish fisheries and further minimize halibut bycatch mortality. The directed sablefish fishery takes significant amounts of grenadiers, arrowtooth flounder, spiny dogfish, sharks and rockfish; but the fishery does not pose a threat to bycatch species. Management measures limit interactions with seabirds and the fishery has minimal impact on the short-tailed albatross, the only seabird listed as endangered under the ESA. Interactions with whales remain a problem as they take fish off longline gear, but the fishery does not adversely affect whale populations.

**Evidence:**

**Impacts of fishing gear on the habitat**

The, NPFMC and NOAA/NMFS conduct assessments and research related to fishery impacts on ecosystems and habitats and how environmental factors affect the fishery. Findings and conclusions are published in the Ecosystem section of the SAFE document, annual Ecosystem Considerations documents, and the various other research reports. The Essential Fish Habitat Environmental Impact Statement (EFH EIS) (NMFS, 2005) concluded that. Benthic longline and fish pot fisheries have minimal or temporary impacts on sablefish habitat while trawl fisheries have substantial long term effects.

The Essential Fish Habitat Environmental Impact Statement (EFH EIS) (NMFS 2005) concluded that the effects of commercial fishing on the habitat of sablefish is minimal or temporary in the current fishery management regime primarily based on the criterion that sablefish are currently above Minimum Stock Size Threshold (MSST).

Juvenile sablefish are partly dependent on benthic prey (18% of diet by weight) and the availability of benthic prey may be adversely affected by fishing. Little is known about effects of fishing on benthic habitat or the habitat requirements for growth to maturity. Although sablefish do not appear to be directly dependent on physical structure, reduction of living structure is predicted in much of the area where juvenile sablefish reside and this may indirectly reduce juvenile survivorship by reducing prey availability or by altering the abilities of competing species to feed and avoid predation

The effects of lost/abandoned gear have been studied. In a NMFS report on a working group reviewing ghost fishing, the group determined that longline gear garnered a “Low Priority Recommendations” when compared to pot and net gears<sup>188</sup>.

The NOAA Marine Debris Prevention and Removal Program<sup>189</sup> uses non-regulatory measures to reduce and prevent marine debris and the loss of fishing gear, including the development of local or regional protocols for lost gear reduction and prevention. Examples of such measures include new fishing gear technology, implementation of incentives to reduce lost gear, outreach and education to commercial users and the general public, and other non-regulatory measures to minimize the volume of marine debris and lost and discarded fishing gear, and to aid in its recovery. Examples of such measures include new fishing gear technology, implementation of incentives to reduce lost gear, outreach and education to commercial users and the general public, and other non-regulatory measures to minimize the volume of marine debris and lost and discarded fishing gear, and to aid in its recovery.

#### **Impact of fishing gear on seabirds**

The short-tailed albatross is a listed species under the Endangered Species Act (ESA). As such, incidental takes in the longline fishery are regulated and limits are set. The limit set by NMFS under the current ESA biological opinion is a maximum of four birds in a two- year cycle. If that level is exceeded, it automatically initiates an ESA Section 7 Consultation, which involves a consultation between the US Fish and Wildlife Service and the National Marine Fisheries Service. New regulations and further avoidance measures can be placed on the fishery by NMFS.

#### **Bycatch of sablefish in other fisheries (the GOA and BSAI groundfish fishery)**

The Alaska Sablefish longline fishery was one of the first fully domestic fisheries to become established off Alaska<sup>190</sup>. As the groundfish fisheries developed, regulations were implemented to limit bycatch of sablefish, so as to minimize impacts on sablefish fisheries. Sablefish are taken as incidental catch in federally managed groundfish trawl, hook-and-line, and pot fisheries in the Gulf and Alaska and Bering Sea/Aleutian Islands areas. Interception of juvenile and adult sablefish occurs in trawl fisheries targeting groundfish species (such as rock fish, flatfish, pollock, and Pacific cod). Incidental catch of sablefish also occurs in groundfish hook-and-line and trawl gear fisheries that typically focus on Pacific cod.

In June 2015<sup>191</sup>, the Council took final action to reduce halibut PSC mortality limits in the BSAI groundfish fisheries overall from 4,426 mt to 3,515 mt, a 21% reduction. PSC limits in the BSAI groundfish fisheries are apportioned among sectors and gear types (currently to all trawl fisheries and longline fisheries for all targets except IFQ sablefish), and a different reduction was applied to each. In June 2012, the Council took action to reduce halibut bycatch limits by 15% in the Gulf of Alaska (GOA) trawl fisheries and longline catcher vessel fisheries and 7% in the GOA freezer longline fisheries.

#### **References:**

<sup>188</sup> [https://swfsc.noaa.gov/publications/TM/SWFSC/NOAA-TM-NMFS-SWFSC-154\\_TOC.PDF](https://swfsc.noaa.gov/publications/TM/SWFSC/NOAA-TM-NMFS-SWFSC-154_TOC.PDF)

<sup>189</sup> <https://www.gpo.gov/fdsys/pkg/FR-2009-09-03/pdf/E9-21261.pdf>

<sup>190</sup> <http://www.npfmc.org/halibut-bycatch-overview/>

<sup>191</sup> <http://www.npfmc.org/bsai-halibut-bycatch/>

<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>
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**Supporting Clause 12.3**

The most probable adverse impacts of the fishery on the ecosystem/environment shall be considered, taking into account available scientific information, and local knowledge. In the absence of specific information on the ecosystem impacts of fishing for the unit of certification, generic evidence based on similar fishery situations can be used for fisheries with low risk of severe adverse impact. However, the greater the risk the more specific evidence shall be necessary to ascertain the adequacy of mitigation measures.

FAO Eco (2009) 30.4, 31, 31.4

FAO Eco (2011) 41.4

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

Regulations are in place to address waste, discard, bycatch, and endangered species interactions in the sablefish fisheries. Management actions are in place in respect to increasing knowledge on the bycatch dynamics of the directed sablefish longline fishery (i.e. methods for the estimation of non-target species catch in the unobserved sablefish IFQ fleet and restructuring the observer program for inclusion of the sablefish fleet).

Benthic longline gear is not considered to have serious nor irreversible impacts on marine habitats. Bycatch of seabirds has been addressed by specific regulations put in place to reduce the incidental mortality of the short-tailed albatross, a listed species under the Endangered Species Act (ESA), and other seabird species in 1998, then revised in 2008. None have been taken in the commercial sablefish fishery since 2011. Bird avoidance measures now include the use of streamer (tory) lines, night setting, lineshooters and lining tubes, to reduce seabird interactions when setting or retrieving gear.

While not all lost fishing gear has the ability to ghost fish, abandoned traps, pots and gillnets commonly trap and kill fish, mammals and invertebrates for long periods of time after being lost. However, it is thought to be less of an issue with other types of fishing gear, such as seines and trawl nets.

While individual traps may not have a large impact individually, cumulatively they could seriously damage benthic habitat (Macfadyen et al., 2009). Traps have the potential to damage coral and sponges, smother marine flora and scour sediments. Another issue is the retention of halibut that are incidentally caught when targeting sablefish with pot gear.

Bycatch data were also collected this year, indicating that the majority of the bycatch is made up by grenadiers rockfish species, skates and sharks. These species are managed by the NPFMC under tier 3 and 5 respectively, using OFL and ABC recommendations and catch limits. It is expected that with the implementation of the restructured observer coverage bycatch data collection will improve and allow management to make better informed decisions, especially for species like sharks and skates that generally tend to have low reproductive rates.

**Evidence:**

Regulations are in place to address waste, discard, bycatch, and endangered species interactions in the sablefish fisheries. Management actions are in place in respect to increasing knowledge on the bycatch dynamics of the directed sablefish longline fishery (i.e. methods for the estimation of non-target species catch in the unobserved sablefish IFQ fleet and restructuring the observer program for inclusion of the sablefish fleet).



Benthic longline gear is not considered to have serious nor irreversible impacts on marine habitats. Bycatch of seabirds has been addressed by specific regulations put in place to reduce the incidental mortality of the short-tailed albatross, a listed species under the Endangered Species Act (ESA), and other seabird species in 1998, then revised in 2008. None have been taken in the commercial longline fishery since 2011. Bird avoidance measures now include the use of streamer (tory) lines, night setting, lineshooters and lining tubes, to reduce seabird interactions when setting or retrieving gear.

Seabird occurrence data have been collected during the 2013 IPHC annual setline survey. Bycatch data were also collected this year, indicating that the majority of the bycatch is made up by Pacific cod and spiny dogfish. These species are managed by the NPFMC under tier 3 and 5 respectively, using OFL and ABC recommendations and catch limits. It is expected that with the implementation of the restructured observer coverage in a part of the halibut fleet, bycatch data collection will improve and allow management to make better informed decisions, especially for species like sharks and skates that generally tend to have low reproductive rates.

### **Impacts of fishing gear on the habitat**

Benthic longline is a passive gear (not towed). There are no serious, irreversible concerns of longline sablefish gear interaction on the habitat that are presented by management. However, derelict traps and pots have been shown to damage benthic habitats. Sandy and muddy bottoms are less impacted by incidences of traps than complex habitat such as rocky, coral and sponge reefs and vegetated bottoms such as eelgrass and kelp beds (Barnette, 2001). While individual traps may not have a large impact individually, cumulatively they could seriously damage benthic habitat (Macfadyen et al., 2009). Traps have the potential to damage coral and sponges, smother marine flora and scour sediments (Macfadyen et al., 2009). This damage to live substrate can in turn reduce food and shelter for other organisms (Barnette, 2001).

Due to their large size, derelict nets can impact a much larger area of benthic habitat than traps. Derelict nets can cause damage in numerous different types of benthic habitat, but it has been noted that reef habitat is particularly susceptible due to its topographic complexity and fragility (Brainard et al., 2000). Nets can entrap sediments which suffocate sessile benthic invertebrate communities, and obstruct or inhibit access to fish and other marine species that live within the reef habitat. Nets can also cause breakage or damage to corals and other fragile species from scouring during net movement that can result from currents or storms (Brainard et al., 2000).

### **Ghost Fishing**

The effects of lost/abandoned gear have been documented. In a NMFS report on a working group reviewing ghost fishing, the group determined that longline gear garnered a “Low Priority Recommendations” when compared to pot and net gears<sup>192</sup>. While not all derelict fishing gear has the ability to ghost fish, abandoned traps, pots and gillnets commonly trap and kill fish, mammals and invertebrates for long periods of time after being lost (Matsuoka et al., 2005, 692). It is thought to be less of an issue with other types of fishing gear, such as seines and trawl nets (FAO, 2012).

Derelict traps and pots have been shown to ghost fish long after they have been lost or abandoned. Traps are often lost after their surface buoy is dislodged. Once the trap is lost, it will continue to trap crabs, prawns and other invertebrates in the short term using the existing bait.

While all types of fishing nets have the potential to be lost at sea, recent studies have shown that gillnets represent the vast majority of those recovered in Pacific waters (Brown et al., 2005). Other nets with the

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<sup>192</sup> [https://swfsc.noaa.gov/publications/TM/SWFSC/NOAA-TM-NMFS-SWFSC-154\\_TOC.PDF](https://swfsc.noaa.gov/publications/TM/SWFSC/NOAA-TM-NMFS-SWFSC-154_TOC.PDF)

potential to ghost fish include trammel nets, purse seines, aquaculture nets, and to a minor extent bottom trawls

#### Impact of fishing gear on seabirds

The short-tailed albatross is a listed species under the Endangered Species Act (ESA). As such, incidental takes in the longline fishery are regulated and limits are set. The limit set by NMFS under the current ESA biological opinion is a maximum of two birds in a two- year cycle. If that level is exceeded, it automatically initiates an ESA Section 7 Consultation, which involves a consultation between the US Fish and Wildlife Service and the National Marine Fisheries Service. New regulations and further avoidance measures can be placed on the fishery by NMFS.

#### TEP (Threatened, Endangered, Proposed) fish species

As described in federal regulation, there are no threatened or endangered species of fish in Alaska<sup>193</sup>. However, several TEP species are managed by the NMFS (Table 5).

**Table 5.** Species managed by National Marine Fisheries Service (NMFS), species and status.

Common Name	Scientific Name	Status	Critical Habitat in Alaska?
Humpback Whale	<i>Megaptera novaeangliae</i>	Endangered	No
Fin Whale	<i>Balaenoptera physalus</i>	Endangered	No
Bowhead Whale	<i>Balaena mysticetus</i>	Endangered	No
Sperm Whale	<i>Physeter macrocephalus</i>	Endangered	No
Blue Whale	<i>Balaenoptera musculus</i>	Endangered	No
North Pacific Right Whale	<i>Eubalaena japonica</i>	Endangered	Yes
Sei Whale	<i>Balaenoptera borealis</i>	Endangered	No
Cook Inlet Beluga Whale	<i>Delphinapterus leucas</i>	Endangered	Yes
Western North Pacific Gray Whale	<i>Eschrichtius robustus</i>	Endangered	No
Steller Sea Lion	<i>Eumetopias jubatus</i>	Endangered	Yes
Bearded Seal	<i>Erignathus barbatus</i>	Threatened	No
Ringed Seal	<i>Phoca hispida</i>	Threatened	No
Harbor Seal	<i>Phoca vitulina</i>	Candidate	No
Upper Columbia River Spring Chinook Salmon	<i>Oncorhynchus tshawytscha</i>	Endangered	No
Snake River Sockeye Salmon	<i>Oncorhynchus nerka</i>	Endangered	No
Upper Columbia River Steelhead*	<i>Oncorhynchus mykiss</i>	Endangered	No
Snake River Fall Chinook Salmon*	<i>Oncorhynchus tshawytscha</i>	Threatened	No
Snake River Spring/Fall Chinook Salmon*	<i>Oncorhynchus tshawytscha</i>	Threatened	No
Puget Sound Chinook Salmon*	<i>Oncorhynchus tshawytscha</i>	Threatened	No
Lower Columbia River Chinook Salmon*	<i>Oncorhynchus tshawytscha</i>	Threatened	No
Upper Willamette River Chinook Salmon*	<i>Oncorhynchus tshawytscha</i>	Threatened	No
Lower Columbia River Coho Salmon*	<i>Oncorhynchus kisutch</i>	Threatened	No
Hood Canal Summer Run Chum Salmon*	<i>Oncorhynchus keta</i>	Threatened	No
Snake River Basin Steelhead*	<i>Oncorhynchus mykiss</i>	Threatened	No

<sup>193</sup> <http://ecos.fws.gov/ecp0/reports/species-listed-by-state-report?state=AK&status=listed>

Leatherback Turtle	<i>Dermochelis coracea</i>	Endangered	No
Green Sea Turtle	<i>Chelonias mydas</i>	Threatened	No
Loggerhead Turtle	<i>Caretta Caretta</i>	Threatened	No
Ridley Turtle	<i>Lepidochelys olivacea</i>	Threatened	No
Lower Columbia River Steelhead*	<i>Oncorhynchus mykiss</i>	Threatened	No
Upper Willamette River Steelhead*	<i>Oncorhynchus mykiss</i>	Threatened	No
Middle Columbia River Steelhead*	<i>Oncorhynchus mykiss</i>	Threatened	No
Green Sturgeon (Southern DPS)*	<i>Acipenser medirostris</i>	Threatened	No

### Bycatch

An average of 66% of the sablefish fishery bycatch consists of grenadiers and the trend is stable.

The catch of seabirds in the sablefish fishery averages 17% of the total bycatch by volume. The trend in seabird bycatch is variable but appears to be decreasing, presumably due to widespread use of measures to reduce seabird catch. Sablefish fishery catches of other species is minor.

Sablefish discards have decreased in recent years. From 1994 to 2003 discards averaged 1,357 t for the GOA and BSAI combined. The highest amount was 800 t in 2004, of which 667 t occurred in the GOA and 133 t occurred in the BSAI. Discards decreased after 2003, down to an average in 2004-09 of 697 mt, 89% of which occurred in the GOA. The discards from trawl fisheries decreased from a 1994-2003 average of 825 t to an average of 262 mt for 2004-2009, while hook and line fisheries decreased slightly from 525 t down to 462 t. Grenadiers are by far the most abundant bycatch in the sablefish fishery.

Status of Grenadier have been evaluated by Rodgevell and Hulson (2014) . Given that grenadier is categorized as a data poor stock an OFL and ABC were calculated by an average of the last three trawl surveys that sampled down to 1,000 m. The authors concluded that overfishing is not occurring.

Commercially valuable species taken in the sablefish fishery include thornyhead rockfish, shortraker rockfish, rough eye rockfish, and Pacific cod.

NMFS has a National Bycatch Reduction Strategy, which is intended to guide and coordinate efforts to reduce bycatch and bycatch mortality in the coming years. Key areas of focus include:

- monitor and estimate the rates of bycatch and bycatch mortality in fisheries to understand the level of impact and the nature of the interaction;
- research to improve estimates of bycatch rates, better understand the impacts of bycatch on species interactions and community dynamics, modify fishing gear, and develop mitigation tools to minimize bycatch and its impacts;
- develop and implement domestic management measures and promote the adoption and implementation of international measures to address bycatch and its impacts;
- evaluate the effectiveness of science and management programs to determine whether programs achieve stated goals and identify needed improvements;
- enforce fishery management measures and work with state, federal, and international partners to ensure compliance with all applicable laws;
- communicate with agencies and stakeholders to maximize the impact of bycatch reduction efforts.

In 2014 , The Secretary of Commerce approved Amendments 100/91 on August 6, which added the grenadier complex into both FMPs as Ecosystem Components. Under this rule, they are not allowed to be targeted but there is an 8% Maximum Retainable Allowance (MRA)

**Seabirds**

The Alaska Region (AKR) has been actively addressing seabird incidental take in longline (hook-and-line) fisheries off Alaska since 1989. AKR seabird-related responsibilities and activities include: consultations under the Endangered Species Act, data collection by fishery observers, public and industry outreach and education, research, regulatory action, and participation in the development of actions to reduce the incidental take of seabirds in Alaska fisheries. The Alaska Region plays a proactive role in its coordination with local, regional, national, and international agencies, organizations, and experts in its efforts to reduce seabird incidental take in hook-and-line fisheries<sup>194</sup>.

Bycatch of seabirds have been addressed by specific regulations that were put in place that intended to reduce the incidental mortality of the short-tailed albatross and other seabird species<sup>195</sup>. The short-tailed albatross is a listed species under the Endangered Species Act (ESA).

Measures in place to reduce seabird interactions now include the use of streamer (tory) lines, night setting, linesshooters and lining tubes, which have been shown to reduce seabird interactions when setting or retrieving gear. To date, reports states that bycatch mitigation measures by the overall freezer longline fleet in Alaska have resulted in a 90% reduction in takes of seabirds<sup>196</sup>. For the sablefish fishery the trend in seabird catch is variable, but is substantially low compared to the 1990s, due to the use of measures to reduce seabird catch (Hanselman et al 2015).

Since 2002 The IPHC permanently incorporated the seabird data collection protocols into its survey program. Sampling seabird occurrence after the haul addresses the question of where and when certain seabird species occur, and aids in the assessment of individual species at risk by providing information that may reflect population trends over time<sup>197</sup>.

**Marine Mammals**

Although marine mammals are known to interact with sablefish longline gear, bycatch is virtually non-existent. Sperm Whales, Killer whales seals may selectively eat hooked groundfish species such as sablefish , Greenland turbot, halibut, or Pacific cod directly from the longline gear before the line is retrieved by the vessel. In such instances there would be only empty hooks as the line is retrieved over the roller and into the vessel.

The Alaska Region (AKR) has been actively addressing marine mammal incidental take in federal and state commercial fisheries off Alaska since 1989 and in foreign fisheries since the early 1980s. AKR responsibilities and activities include: authorization of incidental takes, monitoring and data collection by fishery observers, public and industry outreach and education, consultations under the Endangered Species Act, research, regulatory action, and participation in the development of national and regional plans and policies to reduce the incidental take of marine mammals in commercial fisheries. The Alaska Region coordinates with local, regional, national agencies, organizations, and experts in its efforts to reduce incidental takes<sup>198</sup>.

A recent NMFS report on marine mammal interactions in the groundfish fisheries recounts that no Steller sea lion (eastern and western stock) were accidentally by-caught by the sablefish longline fishery between 2000

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<sup>194</sup> <https://alaskafisheries.noaa.gov/pr/seabird-bycatch>

<sup>195</sup> <https://alaskafisheries.noaa.gov/pr/seabird-bycatch-regs>

<sup>196</sup> <http://www.fishwatch.gov/profiles/pacific-halibut>

<sup>197</sup> [http://www.iphc.int/publications/rara/2015/RARA2015\\_23Seabirds.pdf](http://www.iphc.int/publications/rara/2015/RARA2015_23Seabirds.pdf)

<sup>198</sup> <https://alaskafisheries.noaa.gov/pr/mm-fishery-interactions>

and 2004. No other otariid species were documented in the report. In the same, similar non-harmful interaction with whales were documented between 1998 and 2004: 82 fishing days where Killer whales had predatory interactions (plucking fish from hooks) with the BSAI sablefish longline fishery; and 17 fishing days where Sperm whales had predatory interactions with the GOA sablefish fishery<sup>199</sup>.

In Alaska, depredation primarily affects the economically significant halibut and sablefish fisheries<sup>200</sup>. Depredation can have negative consequences to whales, fishermen, and the management of the fishery. Whales engaging in depredation have a higher risk of injury due to vessel strikes or entanglement with fishing gear. They can also become habituated to the presence of these food sources, altering their foraging behaviors and increasing their dependence on longline fisheries. Fishermen can be severely impacted by the reduction in a season’s catch due to depredation and the near complete loss of individual hauls in the presence of whales. The measures they take to avoid or mitigate for depredation, like increasing set times or moving to different fishing areas, can further increase the costs of operation.

Depredation also affects efforts to sustainably manage these high valued fisheries. Without fully quantifying the losses due to depredation or incorporating this factor into measures of catch per unit effort (CPUE, a commonly used measure in fisheries management), the ability of fishery managers to accurately assess the stocks is diminished. While sperm whale depredation occurs primarily in the central and eastern Gulf of Alaska and in southeast Alaska, killer whale depredation is more likely to take place in the western Gulf of Alaska, the Aleutian Islands, and the Bering Sea.

Recent analyses done by UAF on a long-term longline survey data set collected by NMFS and found that, when depredating, killer whales removed or damaged an estimated 54 – 72% of sablefish catches across all regions and 51% of Alaska Sablefish catches in the western Gulf of Alaska. Furthermore, the researchers found that the frequency of depredation has increased in recent years in both the western Gulf and the Aleutian Islands.

**Sharks**

There are no directed fisheries for sharks in the BSAI or in the GOA, but some sharks are caught incidentally in other directed commercial fisheries. These sharks are generally not retained. They are currently included as part of the "Other Species" complex in the BSAI and GOA Groundfish Fishery Management Plans. A total allowable catch is set annually for the Other Species management category.

There is no evidence to suggest that overfishing is occurring for any shark species in the BSAI or GOA (Tribuzio et al 2015a,b).

**Bait fisheries**

Most bait is purchased frozen, and thawed before using. Beside salmon, herring, cod and octopus or squid are typically purchased for bait. These bait species are well managed by either the State of Alaska or the NMFS, and none are classified as endangered or threatened.

<b>References:</b>	
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>

<sup>199</sup> <http://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-167.pdf>

<sup>200</sup> <http://www.igert.org/highlights/756>



**Supporting Clause 12.4**

Impacts that are likely to have serious consequences shall be addressed. This may take the form of an immediate management response or a further analysis of the identified risk. In this context, full recognition should be given to the special circumstances and requirements in developing countries and countries in transition, including financial and technical assistance, technology transfer, training and scientific cooperation.

FAO Eco (2009) 29.3, 29.4, 31

FAO Eco (2011) 41

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<p><b>Summary Evidence:</b>                      NPFMC and NOAA/NMFS conduct assessments and research on environmental factors as affected by the commercial sablefish fishery and associated species and their habitats. Findings and conclusions are published annually in the Ecosystem Considerations section of the SAFE report.</p> <p>The SAFE reports include sablefish sections for 1) ecosystem effects on the stock and 2) effects of the fishery on the ecosystem. NOAA’s Fishery and the Environment (FATE) program and Resource Ecology and Ecosystem Management (REEM) group sponsors an Alaska Marine Ecosystem Considerations webpage that provides the latest SAFE Ecosystems Considerations report plus recent research findings and resources.</p>				
<p><b>Evidence:</b>                      NPFMC and NOAA/NMFS conduct assessments and research on environmental factors as affected by the commercial sablefish fishery and associated species and their habitats. Findings and conclusions are published annually in the Ecosystem Considerations section of the SAFE report<sup>201</sup>.</p> <p>The SAFE reports include sablefish sections for 1) ecosystem effects on the stock and 2) effects of the fishery on the ecosystem. NOAA’s Fishery and the Environment (FATE) program and Resource Ecology and Ecosystem Management (REEM) group sponsors an Alaska Marine Ecosystem Considerations webpage that provides the latest SAFE Ecosystems Considerations report plus recent research findings and resources.</p>				
<p><b>Table 4.</b> Summary of the ecosystem considerations for the sablefish fisheries.</p>				

<sup>201</sup> <http://access.afsc.noaa.gov/reem/ecoweb/Index.php>

<i>Indicator</i>	<i>Observation</i>	<i>Interpretation</i>	<i>Evaluation</i>
<b><i>ECOSYSTEM EFFECTS ON STOCK</i></b>			
<i>Prey availability or abundance trends</i>			
Zooplankton	None	None	Unknown
<i>Predator population trends</i>			
Salmon	Decreasing	Increases the stock	No concern
<i>Changes in habitat quality</i>			
Temperature regime	Warm increases recruitment	Variable recruitment	No concern (can't affect)
Prevailing currents	Northerly increases recruitment	Variable recruitment	No concern (can't affect)
<b><i>FISHERY EFFECTS ON ECOSYSTEM</i></b>			
<i>Fishery contribution to bycatch</i>			
Prohibited species	Small catches	Minor contribution to mortality	No concern
Forage species	Small catches	Minor contribution to mortality	No concern
HAPC biota (seapens/whips, corals, sponges, anemones)	Small catches, except long-term reductions predicted	Long-term reductions predicted in hard corals and living structure	Possible concern
Marine mammals and birds	Bird catch about 10% total	Appears to be decreasing	Possible concern
Sensitive non-target species	Grenadier, spiny dogfish, and unidentified shark catch notable	Grenadier catch high but stable, recent shark catch is small	Possible concern for grenadiers
<i>Fishery concentration in space and time</i>	IFQ less concentrated	IFQ improves	No concern
<i>Fishery effects on amount of large size target fish</i>	IFQ reduces catch of immature	IFQ improves	No concern
<i>Fishery contribution to discards and offal production</i>	sablefish <5% in longline fishery, but 30% in trawl fishery	IFQ improves, but notable discards in trawl fishery	Trawl fishery discards definite concern
<i>Fishery effects on age-at-maturity and fecundity</i>	trawl fishery catches smaller fish, but only small part of total catch	slightly decreases	No concern

The sablefish fishery catches significant portions of the shark and thornyhead rockfish total catch. The sablefish fishery catches the majority of grenadier total catch; the annual amount is variable. The trend in seabird catch is variable, but is substantially low compared to the 1990s, presumably due to widespread use of measures to reduce seabird catch.

The shift from an open-access to an IFQ fishery has increased catching efficiency, which has reduced the number of hooks deployed (Sigler and Lunsford 2001). Although the effects of longline gear on bottom habitat are poorly known, the reduced number of hooks deployed during the IFQ fishery must reduce the effects on benthic habitat. The IFQ fishery likely has also reduced discards of other species because of the slower pace of the fishery and the incentive to maximize value from the catch. Incidences of gear interactions on habitats by traps and trawl have been reduced by gear modifications mandates (ie biodegradable materials , proliferation of non-trawlable areas )



Table 5 shows the bycatch of the GOA and BSAI Fishery Management Plans' (FMP) species in the sablefish target fishery. The largest bycatch is Thornyhead rockfish (520 t/year, 151 t discarded). Arrowtooth is the only species that has substantial catch from non-longline gear. Arrowtooth flounder and shark are the 2<sup>nd</sup> and 3<sup>rd</sup> most caught species at 348 t/year and 331 t/year. The next groups are GOA shortraker rockfish, "Other rockfish", and GOA longnose skate which total 535 t/year. Other non-target catches that have substantial amount of discards are grenadiers with 6-8000t followed by corals, snails, sponges, sea stars, and miscellaneous fishes and crabs on very minor scale.

**Table 5.** Bycatch of the GOA and BSAI Fishery Management Plans' (FMP) species in the sablefish target fishery

Species	Hook and Line			Other Gear			All Gear		
	Discard	Retained	Total	Discard	Retained	Total	Discard	Retained	Total
GOA Thornyhead Rockfish	147	346	493	4	23	27	151	369	520
Arrowtooth Flounder	198	40	238	106	4	110	304	44	348
Shark	330	0	331	1	0	1	331	0	331
GOA Shortraker Rockfish	127	91	219	11	9	20	138	101	239
Other Rockfish	57	95	153	2	1	3	59	96	156
GOA Skate, Longnose	133	7	139	1	0	1	134	7	140
GOA Roughey Rockfish	55	80	135	2	3	5	57	83	140
GOA Skate, Other	133	2	136	2	0	2	135	2	137
Pacific Cod	40	46	85	1	4	5	41	50	91
Other Species	84	1	85	1	0	1	85	1	86
Greenland Turbot	23	51	74	10	1	10	33	52	85
BSAI Skate	52	0	52	0	-	0	52	0	52
GOA Deep Water Flatfish	8	0	8	16	5	22	24	5	30
Pacific Ocean Perch	1	0	1	2	15	17	2	15	18
BSAI Kamchatka Flounder	12	2	13	3	0	3	15	2	17
BSAI Shortraker Rockfish	5	8	14	0	0	0	6	8	14
BSAI Other Flatfish	11	0	11	1	0	1	12	0	12
GOA Rex Sole	0	-	0	8	4	11	8	4	11
Sculpin	10	-	10	0	0	0	10	0	10
<b>Total</b>	<b>1,315</b>	<b>728</b>	<b>2,046</b>	<b>220</b>	<b>102</b>	<b>322</b>	<b>1,535</b>	<b>830</b>	<b>2,369</b>

**Non-target, Non-FMP bycatch****Table 6.** Bycatch of non-target species and HAPC biota in the targeted sablefish fishery.

<u>Group Name</u>	<u>Estimated Catch (t)</u>				
	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>
Benthic turochordata	0.01	0.13	0.13	1.08	0.00
Birds	0.47	0.45	1.46	0.22	0.64
Bivalves	0.04	0.04	0.05	0.01	0.00
Brittle star unidentified	0.45	0.12	0.44	4.52	0.10
Corals Bryozoans	2.21	3.33	5.57	7.57	12.75
Dark Rockfish	0.14	0.00	0.00	0.03	0.07
Eelpouts	1.83	1.38	0.58	0.62	1.11
Giant Grenadier	6,011	4,767	6,973	6,993	8,083
Greenlings	0.07	0.00	0.02	0.00	0.00
Grenadier	1,139	864	843	1,020	1,519
Hermit crab unidentified	0.10	0.19	0.21	0.08	0.09
Invertebrate unidentified	1.53	2.08	2.02	6.81	0.18
Misc crabs	3.29	1.89	1.13	0.31	0.51
Misc crustaceans	2.36	0.00	0.00	0.00	0.00
Misc deep fish	0.00	0.00	0.00	0.00	0.00
Misc fish	5.03	6.20	8.43	10.12	28.81
Scypho jellies	0.08	0.11	0.69	0.00	0.00
Sea anemone unidentified	2.26	1.49	3.29	0.99	0.92
Sea pens whips	0.52	0.35	1.58	0.25	0.28
Sea star	2.97	3.91	3.45	2.99	18.79
Snails	10.79	11.49	20.04	12.08	8.77
Sponge unidentified	2.17	1.05	2.08	0.94	3.31
Urchins, dollars, cucumbers	1.64	0.58	0.26	0.78	0.72

**Prohibited species catches (PSC)**

Prohibited species catches (PSC) in the targeted sablefish fisheries are dominated by halibut (334 t/year on average) and golden king crab (47,000 individuals/year on average) (Table 7). Crab catches are highly variable from year to year, probably as a result of relatively low observer sampling effort in sablefish fisheries.

**Table 7.** Prohibited Species Catch (PSC) estimates reported in tons for halibut and numbers of animals for crab and salmon, by year, and fisheries management plan (BSAI or GOA) for the sablefish fishery. Other = Pot and trawl combined because of confidentiality. Source: NMFS AKRO Blend/Catch Accounting System PSCNQ via AKFIN, October 29, 2015.

BSAI								
Hook and Line	Year	Bairdi	Chinook	Golden KC	Halibut	Other salmon	Opilio	Red KC
Hook and Line	2011	0	0	527	101	0	18	18
	2012	0	0	420	82	0	0	7
	2013	0	15	465	66	8	0	0
	2014	0	0	471	38	0	0	40
	2015	0	9	181	23	0	0	159
	Mean	0	5	413	62	2	4	45
Other	2011	808	0	198,724	13	0	249	294
	2012	0	0	16,754	10	0	119	0
	2013	222	0	788	18	0	314	0
	2014	0	0	3,193	6	0	1,679	0
	2015	0	0	11,270	1	0	26	0
	Mean	206	0	46,146	10	0	477	59
<b>BSAI Mean</b>		<b>206</b>	<b>5</b>	<b>46,558</b>	<b>72</b>	<b>2</b>	<b>481</b>	<b>104</b>
GOA								
Hook and Line	2011	0	0	120	212	304	0	0
	2012	0	0	23	293	248	0	0
	2013	78	4	93	273	519	0	24
	2014	6	39	39	250	284	0	0
	2015	165	25	24	256	375	0	29
	Mean	50	14	60	257	346	0	11
Other	2011	0	0	132	6	0	0	0
	2012	0	0	9	5	0	0	0
	2013	0	0	0	12	12	0	0
	2014	0	0	18	2	0	0	0
	2015	20	0	0	3	0	0	0
	Mean	4	0	32	5	2	0	0
<b>GOA Mean</b>		<b>54</b>	<b>14</b>	<b>92</b>	<b>262</b>	<b>348</b>	<b>0</b>	<b>11</b>

**Bycatch in state waters**

Alaska manages bycatch in state waters and sets allowable bycatch amounts for key species.

**Bycatch Allowances in the NSEI sablefish state fishery**

Allowable bycatch percentage indicates the amount of bycatch that may be legally landed on an NSEI sablefish permit, based on the round weight of sablefish and round weight of bycatch species or species group:

**Table 8. Bycatch Allowances in the NSEI sablefish state fishery.**

<b>Bycatch Species</b>	<b>Allowable Bycatch Amount</b>
Demersal Shelf Rockfish (DSR)	1%
Shortraker and Rougheye rockfish	7% in aggregate
Other rockfish & thornyheads	15% in aggregate
Lingcod	0%
Pacific Cod	20%
Spiny dogfish	35%
Other groundfish	20%

Full-retention and reporting of rockfish, excluding thornyheads, is required for CFEC permit holders fishing for groundfish in NSEI. All rockfish in excess of allowable bycatch limits shall be reported as bycatch overage on an ADFG fish ticket and proceeds from the sale of excess rockfish shall be surrendered to the state [5AAC 28.171(f)]. Pacific cod in excess of bycatch limits described above may be landed on a CFEC miscellaneous finfish (M) permit in areas open to directed Pacific cod fishing. Fishermen with halibut IFQ in regulatory area 2C and a CFEC halibut permit card must retain all halibut over 32 inches in length, up to the amount of their IFQ.

#### **Grenadier interactions and management options**

Giant grenadiers, a non-target species make up the bulk of the non-target species bycatch, with 2013 the highest in the last five years at 8,083 t. Their catch averages 66% of the total bycatch in the sablefish fishery. Giant grenadier is abundant on the continental slope of Alaska and scientists consider it an extremely important component of the ecosystem in this habitat. The amount of giant grenadier taken as bycatch in this region is substantial. In the GOA in 2010, the estimated catch of giant grenadier of 5,419 t was exceeded for only five groundfish species: walleye pollock (*Gadus chalcogramma*), Pacific cod (*Gadus macrocephalus*), arrowtooth flounder (*Atheresthes stomias*), Pacific ocean perch (*Sebastes alutus*), and sablefish. Most of the giant grenadier bycatch in the GOA is from the sablefish longline fishery, and nearly all is discarded at sea with a likely mortality rate of 100%.

The Secretary of Commerce approved Amendments 100/91 on August 6th 2014, which added the grenadier complex into both FMPs as Ecosystem Components. Under this rule, they are not allowed to be targeted but there is an 8% Maximum Retainable Allowance (MRA) (Federal Register, Proposed Rules, Vol. 79, No. 93). Latest stock assessment shows these species are not overfished no overfishing is occurring.

From Rodgeveller et al 2014

**Gulf of Alaska Grenadiers**

Quantity	As estimated or specified last year for <sup>a</sup> :		As estimated or recommended this year for:	
	2014	2015	2015	2016
<i>M</i> (natural mortality)	0.078	0.078	0.078	0.078
Specified/recommended Tier	5	5	5	5
Biomass (t)	597,884	597,884	524,624	524,624
$F_{OFL}$ ( $F=M$ )	0.078	0.078	0.078	0.078
$maxF_{ABC}$ (maximum allowable = $0.75x F_{OFL}$ )	0.0585	0.0585	0.0585	0.0585
$F_{ABC}$	0.0585	0.0585	0.0585	0.0585
OFL (t)	46,635	46,635	40,921	40,921
maxABC (t)	34,976	34,976	30,691	30,691
ABC (t)	34,976	34,976	30,691	30,691
Status	As determined last year for:		As determined this year for:	
	2012	2013	2013	2014
Overfishing	No	n/a	No	n/a

<sup>a</sup>The values for biomass, OFL, and ABC in these two columns are based on Rodgveller and Hulson 2013. They are an average of the last three trawl surveys that sampled down to 1,000 m. The current values (for 2015 and 2016) are from the random effects model fit to survey biomass by region and depth strata. These are unofficial ABC and OFL values since grenadier are an Ecosystem Component, which do not have ABCs or OFLs.

**Bering Sea and Aleutian Islands Grenadiers**

Quantity	As estimated or specified last year for <sup>a</sup> :		As estimated or recommended this year for:	
	2014	2015	2015	2016
<i>M</i> (natural mortality)	0.078	0.078	0.078	0.078
Specified/recommended Tier	5	5	5	5
Biomass (t)	1,152,284	1,152,284	1,286,734	1,286,734
$F_{OFL}$ ( $F=M$ )	0.078	0.078	0.078	0.078
$maxF_{ABC}$ (maximum allowable = $0.75x F_{OFL}$ )	0.0585	0.0585	0.0585	0.0585
$F_{ABC}$	0.0585	0.0585	0.0585	0.0585
OFL (t)	89,878	89,878	100,365	100,365
maxABC (t)	67,409	67,409	75,274	75,274
ABC (t)	67,409	67,409	75,274	75,274
Status	As determined last year for:		As determined this year for:	
	2012	2013	2013	2014
Overfishing	No	n/a	No	n/a

<sup>a</sup>The values for biomass, OFL, and ABC in these two columns are based on Rodgveller and Hulson 2013. These are unofficial ABC and OFL values since grenadier are an Ecosystem Component, which do not have ABCs or OFLs.

**Fishery impact on the shark complex**

There are three species of sharks that are abundant in Alaska waters: Pacific sleeper shark, *Somniosus pacificus*, spiny dogfish, *Squalus suckleyi*, and salmon shark, *Lamna ditropis*. Currently there is no directed fishing for these species, but they are caught incidentally in other fisheries. The sablefish fishery catches significant portions of spiny dogfish and other/unidentified sharks. Latest stock assessment shows these species are not overfished and no overfishing is occurring (Tribuzio et al 2015a,b). The OFL catch limits of the shark complex have not been exceeded, thus overfishing is not occurring. There are currently no directed commercial fisheries for shark species in federally or state managed waters of the BSAI and GOA, and most

incidentally captured sharks are not retained. Incidental catches of shark species in the BSAI and GOA fisheries have been very small compared to catches of target species.

#### Overfishing limits and Acceptable Biological Catch for Shark Complex in BSAI

Quantity	As estimated or <i>specified last year for:</i>		As estimated or <i>recommended this year for:</i>	
	2014	2015	2015	2016
Tier	6	6	6	6
OFL (t)	1,363	1,363	<b>605</b>	605
maxABC (t)	1,022	1,022	454	454
ABC (t)	1,022	1,022	<b>454</b>	454
Status	As determined <i>last year for:</i>		As determined <i>this year for:</i>	
	2012	2013	2013	2014
Overfishing	No	n/a	No	n/a

#### Seabirds

Bycatch in the longline fishery declined beginning in 2002 due to the deployment of streamer lines as bird deterrents. Since then, annual bycatch has remained below 10,000 birds, dropping as low as 4,007 in 2010. Numbers increased to 8,940 in 2011, the second highest in the streamer line era, but fell back to 4,571 in 2012 and further decreased to 4,246 in 2013. The increased numbers in 2011 were due to a doubling of the gull (*Larus* spp.) numbers (1,088 to 2,157) and a 3-fold increase in fulmars, from 1,882 to 5,848. These species group numbers have decreased in 2012 as well, to 553 and 2,795 respectively. The addition of observers to many vessels in the Gulf of Alaska contributed important data for the understanding of seabird bycatch patterns and quantities

The marked decline in overall numbers of birds caught after 2002 reflects the increased use of seabird mitigation devices. A large portion of the freezer longline fleet adopted these measures in 2002, followed by regulation requiring them for the rest of the fleet beginning in February 2004.

There are many factors that may influence annual variation in bycatch rates, including seabird distribution, population trends, prey supply, and fisheries activities. There seems to be a generally decreasing trend in seabird bycatch since the new estimation procedures began in 2007, indicating no immediate management concern other than continuing the goal of decreased seabird bycatch. It is difficult to determine how seabird bycatch numbers and trends are linked to changes in ecosystem components because seabird mitigation gear is used in the longline fleet. There does appear to be a link between poor ocean conditions and the peak bycatch years, on a species-group basis. Fishermen have noted in some years that the birds appear “starved” and attack baited longline gear more aggressively. In 2008 general seabird bycatch in Alaska was at relatively low levels (driven by lower fulmar and gull bycatch) but albatross numbers were the highest at any time between 2002 and 2013. This could indicate poor ocean conditions in the North Pacific as albatross traveled from the Hawaiian Islands to Alaska. Broad changes in overall seabird bycatch, up to 5,000 birds per year, occurred between 2007 and 2013. This probably indicates changes in food availability rather than drastic changes in how well the fleet employs mitigation gear.

#### Regulations/measures to minimize impacts

Regulations are in place to address waste, discard, bycatch, and endangered species interactions in the sablefish fisheries. NMFS, and ADFG promulgate these regulations through the NPFMC, and the Alaska Board of Fisheries. Since January 2013, the sablefish fleet is partially covered by the newly restructured North Pacific Groundfish Observer Program.

For 25 years, annual catch limits for the Alaska groundfish fishery have been set at or below the acceptable biological catch(ABC) level recommended by fishery scientists. Annual catch limits are set for each groundfish species, and fisheries close when catch limits are reached. All fish caught, whether retained or discarded, count against the catch limit. Managers have implemented numerous measures to reduce bycatch and to ensure an accurate accounting of bycatch that does occur. In all cases, bycatch-related mortality is included in catch accounting.

For example The North Pacific Fishery Management Council recently adopted a Preliminary Preferred Alternative (PPA) to include Grenadiers in the Ecosystem Component of the FMPs. Under the Preferred Preliminary Alternative (PPA), NMFS established record-keeping and reporting requirements for grenadiers, and grenadiers would be closed to “directed fishing.” Further, Maximum Retainable Amount of grenadiers as an incidental catch species would be established and limit grenadier retained catch to 8% (NPFMC 2014).

Bycatch of seabirds has been addressed by specific regulations put in place to reduce the incidental mortality of the short-tailed albatross, a listed species under the Endangered Species Act (ESA), and other seabird species in 1998, then revised in 2008. These measures now include the use of streamer (tory) lines, night setting, lineshooters and lining tubes, have been shown to reduce seabird interactions when setting or retrieving gear. General spawning areas have been mapped in Alaska. The NPFMC has established Marine Protected Areas that benefit juvenile fish and adult spawners. Additional trawl closures for areas in the Bering Sea, Aleutian Islands and Gulf of Alaska provide a significant degree of refuge for juvenile sablefish.

### **Essential Fish Habitat**

The MSA requires fishery management plans to describe and identify Essential Fish Habitat (EFH), minimize to the extent practicable adverse effects of fishing on EFH, and identify other actions to conserve and enhance EFH (16 U.S.C. 1853(a)(7)). Alaska has more than 50% of the U.S. coastline and leads the United States in fish habitat area and value of fish harvested. Major research programs aim to identify habitats that contribute to the survival, growth, and productivity of sablefish, and to determine how to best manage and protect these habitats.

Essential fish habitat (EFH) research support is based on priorities from the EFH Research Implementation Plan for Alaska. Around \$450,000 is spent on EFH research projects each year. Project results are described in annual reports and peer-reviewed literature. Study results contribute to existing Essential Fish Habitat data sets. All federal agencies must consult with NMFS regarding any action they authorize, fund, or undertake that may adversely affect EFH, and NMFS must provide conservation recommendations to federal and state agencies regarding any action that would adversely affect EFH. All significant permits and actions are subject to the Environmental Impact Statement (EIS) process, which not only requires thorough review by scientists and agencies, but also mandates thorough and comprehensive public information and transparency.

The FMP for Groundfish Fisheries in the EEZ off Alaska contains detailed descriptions of essential fish habitats (EFH) that occur in the state’s marine waters, and habitat areas of particular concern. The FMP relates that, *“The EFH regulations at 50 CFR 600.815(a)(8) provide guidance on identifying habitat areas of particular concern (HAPCs). HAPCs are meant to provide greater focus to conservation and management efforts and may require additional protection from adverse effects. Fishery management plans should identify specific types or areas of habitat within EFH as HAPCs based on one or more of the following considerations:*

- *the importance of the ecological function provided by the habitat;*

- *the extent to which the habitat is sensitive to human-induced environmental degradation;*
- *whether, and to what extent, development activities are, or will be, stressing the habitat type; or*
- *the rarity of the habitat type.*

*Proposed HAPCs, identified on a map, must meet at least two of the four considerations established in 50 CFR 600.815(a)(8), and rarity of the habitat is a mandatory criterion. HAPCs may be developed to address identified problems for fishery management plans species, and they must meet clear, specific, adaptive management objectives.*

*The Council initiates the HAPC process by setting priorities and issuing a request for HAPC proposals. Any member of the public may submit a HAPC proposal. HAPC proposals may be solicited every 5 years to coincide with the EFH 5-year review, or may be initiated at any time by the Council. The Council may periodically review existing HAPCs for efficacy and considerations based on new scientific research.*

*In 2005, the Council identified the following areas as HAPCs:*

- *Alaska Seamount Habitat Protection Areas*
- *Bowers Ridge Habitat Conservation Zone*
- *Gulf of Alaska Coral*

The FMP further relates that the Fisheries Council established the Aleutian Islands Habitat Conservation Area, Aleutian Islands Coral Habitat Protection Areas, and the Gulf of Alaska Slope Habitat Conservation Areas to protect salmon EFH from fishing threats, with the following fishing restrictions in these areas:

#### **Aleutian Islands Habitat Conservation Area**

The use of non-pelagic trawl gear, as described in 50 CFR part 679, is prohibited year-round in the Aleutian Islands Habitat Conservation Area, except for the designated areas open to non-pelagic trawl gear fishing.

#### **Aleutian Islands Coral Habitat Protection Areas**

The use of bottom contact gear, as described in 50 CFR part 679, and anchoring by federally permitted fishing vessels is prohibited in Aleutian Islands Coral Habitat Protection Areas.

#### **GOA Slope Habitat Conservation Areas**

The use of non-pelagic trawl gear in the GOA Slope Habitat Conservation Areas by any federally permitted fishing vessel, as described in 50 CFR part 679, is prohibited.

#### **Alaska Seamount Habitat Protection Area**

The use of bottom contact gear and anchoring by a federally permitted fishing vessel, as described in 50 CFR part 679, is prohibited in the Alaska Seamount Habitat Protection Area.

#### **Bowers Ridge Habitat Conservation Zone**

The use of mobile bottom contact gear, as described in 50 CFR part 679, is prohibited in the Bowers Ridge Habitat Conservation Zone.

#### **GOA Coral Habitat Protection Areas within GOA Coral HAPC**

The GOA Coral Habitat Protection Areas are five specific areas within the larger GOA Coral HAPC. The use of bottom contact gear and anchoring, as described in 50 CFR part 679, is prohibited in these areas.



<b>References:</b>	
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>

**Supporting Clause 12.5**

Appropriate measures shall be applied to minimize:

- catch, waste and discards of non-target species (both fish and non-fish species).
- impacts on associated, dependent or endangered species

FAO CCRF (1995) 7.6.9

FAO Eco (2009) 31.1

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

In Alaska, there is a strategy in place to manage most bycatch fish species (main species, groundfish, seabirds) which consists of

1. extensive catch accounting system
2. observer program to estimate discarded catch
3. fishery independent surveys conducted by NOAA- Fisheries
4. statistical stock assessments for all of the main bycatch species
5. a tiered system of assessments that provides for more precautionary annual catch limits when assessments use less precise methods.

The tiered, precautionary procedure for setting annual catch limits provides a high likelihood that stocks will be maintained at levels above their reference points and, and clear procedures exist for restricting catch limits if stock rebuilding is necessary.

**Evidence:**

In Alaska, there is a strategy in place to manage most bycatch fish species (main species, groundfish, seabirds) which consists of (1) extensive catch accounting system (2) observer program to estimate discarded catch (3) fishery independent surveys conducted by NOAA- Fisheries (4) statistical stock assessments for all of the main bycatch species (5) a tiered system of assessments that provides for more precautionary annual catch limits when assessments use less precise methods. The tiered, precautionary procedure for setting annual catch limits provides a high likelihood that stocks will be maintained at levels above their reference points and, and clear procedures exist for restricting catch limits if stock rebuilding is necessary.

Management actions are in place in respect to increasing knowledge on the bycatch dynamics of the directed sablefish fishery (i.e. methods for the estimation of non-target species catch in the unobserved sablefish IFQ fleet and the restructuring the observer program for inclusion of the sablefish fleet). Benthic longline gear is not considered to have serious nor irreversible impacts on marine habitats. Bycatch of seabirds has been addressed by specific regulations put in place to reduce the incidental mortality of the short-tailed albatross, a listed species under the Endangered Species Act (ESA), and other seabird species in 1998, then revised in 2008. None have been taken in 2013. These measures now include the use of tory lines, night setting, linesshooters and lining tubes, and have been shown to significantly reduce seabird interactions. Bycatch data were also collected this year, indicating that the majority of the bycatch is made up by grenadiers ,thornyheads, sharks and skates. These species are managed by the NPFMC under tier 3 and 5 respectively, using OFL and ABC recommendations and catch limits. In the case of grenadiers, the species accounting for most of the discards in the fishery , the North Pacific Fishery Management Council recently adopted a Preliminary Preferred Alternative (PPA) to include Grenadiers in the Ecosystem Component of the FMPs. Under the Preferred Preliminary Alternative (PPA), NMFS established record-keeping and reporting

requirements for grenadiers, and grenadiers would be closed to “directed fishing.” Further, Maximum Retainable Amount of grenadiers as an incidental catch species would be established and limit grenadier retained catch to 8% (NPFMC 2014).

It is expected that with the implementation of the restructured observer coverage, bycatch data collection will improve and allow management to make better informed decisions, especially for species like grenadiers sharks and skates that generally tend to have low reproductive rates.

**References:**

**Non-Conformance Number (if relevant)**

**NA**

**Supporting Clause 12.5.1**

There shall be management objectives that seek to ensure that endangered species are protected from adverse impacts resulting from interactions with the unit of certification and any associated culture or enhancement activity, including recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible.

FAO ECO (2011) 41

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

Several federal policies and associated law establish management guidelines and legal protections for endangered species that might be affected by the Alaskan commercial sablefish fishery. These policies include the Magnuson-Stevens Act, the Marine Mammal Protection Act and the U.S. Endangered Species Act. ADF&G provides additional protections for species and stocks of concern.

**Evidence:**

The purpose of the ESA<sup>202</sup> is to conserve threatened and endangered species and their ecosystems. There are more than 1,900 species listed under the ESA. A species is considered endangered if it is in danger of extinction throughout all or a significant portion of its range. A species is considered threatened if it is likely to become endangered in the future. The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) share responsibility for implementing the ESA. NMFS is responsible for 94 marine species, from whales to sea turtles and salmon to Johnson’s sea grass.

The listing of a species as endangered makes it illegal to "take" (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to do these things) that species. Similar prohibitions usually extend to threatened species. Federal agencies may be allowed limited take of species through interagency consultations with NMFS or USFWS. Non-federal individuals, agencies, or organizations may have limited take through special permits with conservation plans. Effects to the listed species must be minimized and in some cases conservation efforts are required to offset the take. NMFS’ Office of Law Enforcement works with the U.S. Coast Guard and other partners to enforce and prosecute ESA violations.

The Protected Resources program conserves and recovers marine resources by doing the following:

- Listing species under the ESA and designating critical habitat (section 4);
- Developing and implementing recovery plans for listed species (section 4);
- Developing cooperative agreements with and providing grants to States for species conservation (section 6);
- Consulting on any Federal actions that may affect a listed species to minimize the effects of the action (section 7);
- Partnering with other nations to ensure that international trade does not threaten species (section 8);
- Investigating violations of the ESA (section 9);
- Cooperating with non-federal partners to develop conservation plans for the long-term conservation of species (section 10); and
- Authorizing research to learn more about protected species (section 10).

<sup>202</sup> [http://www.nmfs.noaa.gov/pr/pdfs/esa\\_factsheet.pdf](http://www.nmfs.noaa.gov/pr/pdfs/esa_factsheet.pdf)

U.S. fisheries management, including that of Alaskan groundfish fisheries, must be consistent with the Magnuson-Stevens Act, the Marine Mammal Protection Act and the U.S. Endangered Species Act. Each of these establishes management guidelines, objectives and legal protections for threatened and endangered species.

Interactions between Sablefish fisheries with marine mammals and birds have been documented through NMFS' Alaska Marine Mammal Observer Program, which reports on these interactions, including incidental take of endangered species. Under the Marine Mammal Protection Act (MMPA), all Category I and II fisheries must be registered in the Marine Mammal Avoidance Program and report any injuries or mortalities of marine mammals to NMFS within 48 hours. All MMPA category fisheries are liable for incidental take of any ESA-listed species.

**References:**

**Non-Conformance Number (if relevant)**

**NA**

**Supporting Clause 12.6**

Non-target catches, including discards, of stocks other than the “stock under consideration” shall be monitored and shall not threaten these non-target stocks with serious risk of extinction, recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible; if such impacts arise, effective remedial action shall be taken.

FAO Eco (2009) 31.1

FAO Eco (2011) 41.1

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> Monitoring Information of Non-target catches, including discards, of stocks other than the “stock under consideration are collected from fishery independent surveys, catch accounting systems, and restructured observer program to assess changes in risk to outcome status, and to assess bycatch species mortalities.				
<b>Evidence:</b> Monitoring Information of Non-target catches, including discards, of stocks other than the “stock under consideration are collected from fishery independent surveys, catch accounting systems, and restructured observer program to assess changes in risk to outcome status, and to assess bycatch species mortalities. For further information please see stock status reports weblink from NPFMC  <a href="http://www.npfmc.org/safe-stock-assessment-and-fishery-evaluation-reports/">http://www.npfmc.org/safe-stock-assessment-and-fishery-evaluation-reports/</a>				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				

**Supporting Clause 12.7**

The role of the “stock under consideration” in the food web shall be considered, and if it is a key prey species in the ecosystem, management objectives and measures shall be in place to avoid severe adverse impacts on dependent predators.

FAO Eco (2009) 31.2

FAO Eco (2011) 41.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b>				
<p>Alaska Sablefish are not typically categorized as a key prey species for any single marine predator. Several comprehensive studies of the food web in various regions of the northern Pacific Ocean have not indicated that sablefish are heavily utilized by any predator. Predation on sablefish, especially by marine mammals, is apparently low, except in cases where the fish were attached to fishing gear. This is understandable, because adult sablefish are large, active animals that would be difficult to capture in open water. Also, their bottom dwelling habits, generally in offshore areas, make them less accessible to predation than schooling, pelagic species.</p> <p>Alaska sablefish are not a key prey species; as such there is no need for management objectives and measures in place to avoid severe adverse impacts on dependent predators.</p>				
<b>Evidence:</b>				
<p>Alaska Sablefish are not typically categorized as a key prey species for any single marine predator. Several comprehensive studies of the food web in various regions of the northern Pacific Ocean have not indicated that sablefish are heavily utilized by any predator. Predation on sablefish, especially by marine mammals, is apparently low, except in cases where the fish were attached to fishing gear. This is understandable, because adult sablefish are large, active animals that would be difficult to capture in open water. Also, their bottom dwelling habits, generally in offshore areas, make them less accessible to predation than schooling, pelagic species.</p> <p>Alaska sablefish are not a key prey species; as such there is no need for management objectives and measures in place to avoid severe adverse impacts on dependent predators.</p>				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 12.8**

States shall introduce and enforce laws and regulations based on the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78).

FAO CCRF (1995) 8.7.1

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<p><b>Summary Evidence:</b>                  MARPOL 73/78 (the "International Convention for the Prevention of Pollution From Ships") is one of the most important treaties regulating pollution from ships. Six Annexes of the Convention cover the various sources of pollution from ships and provide an overarching framework for international objectives. In the U.S., the Convention is implemented through the Act to Prevent Pollution from Ships (APPS).</p> <p>Under the provisions of the Convention, the United States can take direct enforcement action under U.S. laws against foreign-flagged ships when pollution discharge incidents occur within U.S. jurisdiction.</p>				
<p><b>Evidence:</b>                  MARPOL 73/78<sup>203,204</sup>(the "International Convention for the Prevention of Pollution From Ships") is one of the most important treaties regulating pollution from ships. Six Annexes of the Convention cover the various sources of pollution from ships and provide an overarching framework for international objectives. In the U.S., the Convention is implemented through the Act to Prevent Pollution from Ships (APPS).</p> <p>Under the provisions of the Convention, the United States can take direct enforcement action under U.S. laws against foreign-flagged ships when pollution discharge incidents occur within U.S. jurisdiction. When incidents occur outside U.S. jurisdiction or jurisdiction cannot be determined, the United States refers cases to flag states, in accordance with MARPOL. These procedures require substantial coordination between the Coast Guard, the State Department, and other flag states, and the response rate from flag states has been poor. Different regulations apply to vessels, depending on the individual state.</p>				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>	

<sup>203</sup> <https://www.law.cornell.edu/uscode/text/33/1901>

<sup>204</sup> <http://www.gao.gov/assets/230/228813.pdf>



**Supporting Clause 12.9**

There shall be knowledge of the essential habitats for the “stock under consideration” and potential fishery impacts on them. Impacts on essential habitats and on habitats that are highly vulnerable to damage by the fishing gear involved shall be avoided, minimized or mitigated. In assessing fishery impacts, the full spatial range of the relevant habitat shall be considered, not just that part of the spatial range that is potentially affected by fishing.

FAO Eco (2009) 31.3  
 FAO Eco (2011) 41.3

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

The Magnuson-Stevens Act requires fishery management plans to describe and identify Essential Fish Habitat (EFH), minimize to the extent practicable adverse effects of fishing on EFH, and identify other actions to conserve and enhance EFH (16 U.S.C. 1853(a)(7)).

Essential fish habitats (EFHs) for Alaska sablefish include marine environments, designated and protected by the North Pacific Fishery Management Council, NMFS and ADF&G. Fishing and gear restrictions are in place to protect designated marine areas of EFH, as described in Fisheries Management Plan for Groundfish Fisheries in the EEZ off Alaska. The Fishery Management Plan (FMP) for Groundfish Fisheries in the EEZ off Alaska contains detailed descriptions of essential fish habitats (EFH) that occur in the state’s marine waters, and habitat areas of particular concern. The FMP relates that, “The EFH regulations at 50 CFR 600.815(a)(8) provide guidance on identifying habitat areas of particular concern (HAPCs). HAPCs are meant to provide greater focus to conservation and management efforts and may require additional protection from adverse effects. Fishery management plans should identify specific types or areas of habitat within EFH as HAPCs based on one or more of the following considerations:

1. the importance of the ecological function provided by the habitat;
2. the extent to which the habitat is sensitive to human-induced environmental degradation;
3. whether, and to what extent, development activities are, or will be, stressing the habitat type; or
4. the rarity of the habitat type.

**Evidence:**

The MSA requires fishery management plans to describe and identify Essential Fish Habitat (EFH), minimize to the extent practicable adverse effects of fishing on EFH, and identify other actions to conserve and enhance EFH (16 U.S.C. 1853(a)(7)). Alaska has more than 50% of the U.S. coastline and leads the United States in fish habitat area and value of fish harvested. Major research programs aim to identify habitats that contribute to the survival, growth, and productivity of sablefish, and to determine how to best manage and protect these habitats.

Essential fish habitat (EFH) research support is based on priorities from the EFH Research Implementation Plan for Alaska. Around \$450,000 is spent on EFH research projects each year. Project results are described in annual reports and peer-reviewed literature. Study results contribute to existing Essential Fish Habitat data sets. All federal agencies must consult with NMFS regarding any action they authorize, fund, or undertake that may adversely affect EFH, and NMFS must provide conservation recommendations to federal and state agencies regarding any action that would adversely affect EFH. All significant permits and actions are subject

to the Environmental Impact Statement (EIS) process, which not only requires thorough review by scientists and agencies, but also mandates thorough and comprehensive public information and transparency. The FMP for Groundfish Fisheries in the EEZ off Alaska contains detailed descriptions of essential fish habitats (EFH) that occur in the state's marine waters, and habitat areas of particular concern. The FMP relates that, "The EFH regulations at 50 CFR 600.815(a)(8) provide guidance on identifying habitat areas of particular concern (HAPCs). HAPCs are meant to provide greater focus to conservation and management efforts and may require additional protection from adverse effects. Fishery management plans should identify specific types or areas of habitat within EFH as HAPCs based on one or more of the following considerations:

1. the importance of the ecological function provided by the habitat;
2. the extent to which the habitat is sensitive to human-induced environmental degradation;
3. whether, and to what extent, development activities are, or will be, stressing the habitat type; or
4. the rarity of the habitat type.

Designations of EFH for sablefish in GOA are as follow:

#### **4.2.2.2.3 Sablefish**

**Eggs:** EFH for sablefish eggs is the general distribution area for this life stage, located in deeper waters along the slope (200 to 3,000 m) throughout the GOA, as depicted in Figure E-7.

**Larvae:** EFH for larval sablefish is the general distribution area for this life stage, located in epipelagic waters along the middle shelf (50 to 100 m), outer shelf (100 to 200 m), and slope (200 to 3,000 m) throughout the GOA, as depicted in Figure E-8.

**Early Juveniles:** No EFH description determined. Generally, have been observed in inshore water, bays, and passes, and on shallow shelf pelagic and demersal habitat. Information is limited.

**Late Juveniles:** EFH for late juvenile sablefish is the general distribution area for this life stage, located in the lower portion of the water column, varied habitats, generally softer substrates, and deep shelf gulleys along the slope (200 to 1,000 m) throughout the GOA, as depicted in Figure E-9.

**Adults:** EFH for adult sablefish is the general distribution area for this life stage, located in the lower portion of the water column, varied habitats, generally softer substrates, and deep shelf gulleys along the slope (200 to 1,000 m) throughout the GOA, as depicted in Figure E-9.

Designations of EFH for sablefish in BSAI are as follow:

#### **4.2.2.2.3 Sablefish**

**Eggs:** No EFH description determined. Scientific information notes the rare occurrence of sablefish eggs in the BSAI.

**Larvae:** EFH for larval sablefish is the general distribution area for this life stage, located in pelagic waters along the entire shelf (0 to 200 m) and slope (200 to 3,000 m) throughout the BSAI, as depicted in Figure E- 6.

**Early Juveniles:** No EFH description determined. Generally, have been observed in inshore water, bays, and passes, and on shallow shelf pelagic and demersal habitat. Information is limited.

**Late Juveniles:** EFH for late juvenile sablefish is the general distribution area for this life stage, located in the lower portion of the water column, varied habitats, generally softer substrates, and deep shelf gulleys along the slope (200 to 1,000 m) throughout the BSAI, as depicted in Figure E-7.

**Adults:** EFH for adult sablefish is the general distribution area for this life stage, located in the lower portion of the water column, varied habitats, generally softer substrates, and deep shelf gulleys along the slope (200 to 1,000 m) throughout the BSAI, as depicted in Figure E-7

Proposed HAPCs, identified on a map, must meet at least two of the four considerations established in 50 CFR 600.815(a) (8), and rarity of the habitat is a mandatory criterion. HAPCs may be developed to address identified problems for fishery management plans species, and they must meet clear, specific, adaptive management objectives.

The Council will initiate the HAPC process by setting priorities and issuing a request for HAPC proposals. Any member of the public may submit a HAPC proposal. HAPC proposals may be solicited every 5 years to coincide with the EFH 5-year review, or may be initiated at any time by the Council. The Council will establish a process to review the proposals. The Council may periodically review existing HAPCs for efficacy and considerations based on new scientific research.

Since 2005, the Council identified the following areas as HAPCs:

- Alaska Seamount Habitat Protection Areas
- Bowers Ridge Habitat Conservation Zone
- Gulf of Alaska Coral Habitat Protection Areas
- Gulf of Alaska Slope Habitat Protection Areas
- Areas of Skate Egg Concentration

The FMP further relates that the Fisheries Council established the Aleutian Islands Habitat Conservation Area, Aleutian Islands Coral Habitat Protection Areas, and the Gulf of Alaska Slope Habitat Conservation Areas to protect salmon EFH from fishing threats, with the following fishing restrictions in these areas:

#### **Aleutian Islands Habitat Conservation Area**

The use of non-pelagic trawl gear, as described in 50 CFR part 679, is prohibited year-round in the Aleutian Islands Habitat Conservation Area, except for the designated areas open to non-pelagic trawl gear fishing.

#### **Aleutian Islands Coral Habitat Protection Areas**

The use of bottom contact gear, as described in 50 CFR part 679, and anchoring by federally permitted fishing vessels is prohibited in Aleutian Islands Coral Habitat Protection Areas.

#### **GOA Slope Habitat Conservation Areas**

The use of non-pelagic trawl gear in the GOA Slope Habitat Conservation Areas by any federally permitted fishing vessel, as described in 50 CFR part 679, is prohibited.

#### **Alaska Seamount Habitat Protection Area**

The use of bottom contact gear and anchoring by a federally permitted fishing vessel, as described in 50 CFR part 679, is prohibited in the Alaska Seamount Habitat Protection Area.

#### **Bowers Ridge Habitat Conservation Zone**

The use of mobile bottom contact gear, as described in 50 CFR part 679, is prohibited in the Bowers Ridge Habitat Conservation Zone.

#### **GOA Coral Habitat Protection Areas within GOA Coral HAPC**

The GOA Coral Habitat Protection Areas are five specific areas within the larger GOA Coral HAPC. Maps of these areas, as well as their coordinates, are in Appendix A. The use of bottom contact gear and anchoring, as described in 50 CFR part 679, is prohibited in these areas.

<b>References:</b>	
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>

**Supporting Clause 12.10**

Research shall be promoted on the environmental and social impacts of fishing gear and, in particular, on the impact of such gear on biodiversity and coastal fishing communities.

FAO CCRF (1995) 8.4.8/ 7.6.4

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

In general, during the management of groundfish resources process, NPFMC have encountered controversial issues on marine resources conservation and different social and economic goals for sustainable fishery management, including protection of the long-term health of the resource and the optimization of yield. In their FMPs there are sections describing the economic and socioeconomic characteristics of the fisheries and communities in Alaska. Catch levels for each groundfish species or species group that are set by NPFMC and NMFS AKFSC are based on the best biological, ecological, and socioeconomic information available. Socio-economic data collection and economic analyses are often included under the Regulatory Flexibility Act (RFA), the MSA, the NEPA, the Endangered Species Act, and other applicable laws. AKFSC’s Economic and Social Sciences Research Program produces an annual Economic Status Report of the Groundfish fisheries in Alaska. NOAA Auke Bay lab have been doing continuing research in collaboration with University of Alaska and ADFG on determining effects of fishing gear on benthic habitats

Theses research individual projects fall into three major categories:

- 1) effects of specific gear on specific habitat,
- 2) linkage of fishing induced disturbance to population dynamics of commercial and non-commercial species,
- 3) mitigation-related studies.

**Evidence:**

In general, during the management of groundfish resources process NPFMC, NMFS AKFSC and NOAA Alaska regional office have encountered controversial issues on marine resources conservation and different social and economic goals for sustainable fishery management, including protection of the long-term health of the resource and the optimization of yield. On their FMPs there are sections describing the economic and socioeconomic characteristics of the fisheries and communities in Alaska. Catch levels for each groundfish species or species group that are set by NPFMC and IPHC are based on the best biological, ecological, and socioeconomic information available. Socio-economic data collection and economic analyses are often included under the Regulatory Flexibility Act (RFA), the MSA, the NEPA, the Endangered Species Act, and other applicable laws. AFSC’s Economic and Social Sciences Research Program produces an annual Economic Status Report of the Groundfish fisheries in Alaska<sup>205</sup>. The primary mission of the Economic and Social Sciences Research Program is to provide economic and sociocultural information that will assist NMFS in meeting its stewardship responsibilities. Activities in support of this mission include:

- Collecting economic and sociocultural data relevant for the conservation and management of living marine resources
- Developing models to use that data both to monitor changes in economic and sociocultural indicators and to estimate the economic and sociocultural impacts of alternative management measures

<sup>205</sup> <http://www.afsc.noaa.gov/refm/Socioeconomics/Default.php>

- Preparing reports and publications
- Participating on NPFMC, NMFS, and inter-agency working groups
- Preparing and reviewing research proposals and programs
- Preparing analyses of proposed management measures
- Assisting Alaska Regional Office and NPFMC staff in preparing regulatory analyses
- Providing data summaries

Many of these are cooperative activities conducted with other scientists at the Center, other NMFS sites, the NPFMC, other natural resource agencies, and universities. Currently, the research topics being addressed cooperatively by program staff and scientists at the University of Washington, the University of Alaska, and the University of California, Davis include regional economic impact models, behavioral models of fishing operations, indicators of economic performance, and the non-market valuation of living marine resources.

NOAA Auke Bay lab have been doing continuing research in collaboration with University of Alaska and ADFG on determining effects of fishing gear on benthic habitats

These research individual projects fall into three major categories:

- 1) effects of specific gear on specific habitat,
- 2) linkage of fishing induced disturbance to population dynamics of commercial and non-commercial species,
- 3) mitigation-related studies.

**References:**

**Non-Conformance Number (if relevant)**

**NA**

**Supporting Clause 12.11**

There shall be outcome indicator(s) consistent with achieving management objectives for non-target stocks (i.e. avoiding overfishing and other impacts that are likely to be irreversible or very slowly reversible).

FAO ECO (2011) 41.1

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b>				
<p>Management of non-target species which consists of (1) a catch accounting system, (2) observer program to estimate catches of non-target species, that was heavily restructured in 2013 to better sample the full groundfish fleet, including sablefish vessels which previously had minimal coverage, (3) fishery independent surveys conducted by NOAA-Fisheries AKFSC (4) statistical stock assessments for most non-target species (5) a tiered system of assessments that provides for more precautionary annual catch limits when assessments use less precise methods and clear procedures exist for restricting catch limits if stock rebuilding is necessary, (6) mandatory use of seabird avoidance devices on all vessels larger than 55', and (7) a spatial management strategy that prohibits or restricts vessels from fishing in sensitive habits. This system is expected to keep bycatch species at levels that are highly likely to be within biological limits and minimize impacts to habitat. There is no overfished species and overfishing is not occurring in Alaskan waters<sup>206</sup>.</p>				
<b>Evidence:</b>				
<p>There is a strategy in place to manage the non-target species which consists of</p> <ol style="list-style-type: none"> <li>1. a catch accounting system,</li> <li>2. observer program to estimate catches of non-target species, that was heavily restructured in 2013 to better sample the full groundfish fleet, including halibut vessels which previously had minimal coverage,</li> <li>3. fishery independent surveys conducted by NOAA-Fisheries Alaska Fisheries Science Center,</li> <li>4. statistical stock assessments for most non-target species,</li> <li>5. a tiered system of assessments that provides for more precautionary annual catch limits when assessments use less precise methods and clear procedures exist for restricting catch limits if stock rebuilding is necessary,</li> <li>6. mandatory use of seabird avoidance devices on all vessels larger than 55', and</li> <li>7. a spatial management strategy that prohibits or restricts vessels from fishing in sensitive habits.</li> </ol> <p>This system is expected to keep bycatch species at levels that are highly likely to be within biological limits and minimize impacts to habitat. The evidence for successful implementation of this management strategy is manifest by regular (often annual or bi-annual) stock assessment, in season catch accounting and the healthy stock status for most non-target species relative to reference points. According to the council stock status report, based established empirical reference points for shark, skate and grenadier, all of these species are not overfished nor overfishing is occurring</p> <p>There is no overfished species in Alaska and overfishing is not occurring.</p>				
<b>References:</b>				

<sup>206</sup> <http://www.npfmc.org/>

<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>
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**Supporting Clause 12.12**

There shall be outcome indicator(s) consistent with achieving management objectives that seek to ensure that endangered species are protected from adverse impacts resulting from interactions with the unit of certification and any associated culture or enhancement activity, including recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible.

FAO ECO (2011) 41

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>

**Summary Evidence:**

The U.S. Endangered Species Act is intended to protect species that are in danger of extinction throughout all or a significant portion of their range. The U.S. Fish and Wildlife Service (USFWS) and NMFS maintain lists of species threatened or endangered with extinction. These species receive legal protections that prohibit their “take” (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect or attempt any of these) or destruction of habitat critical to their survival. Impacts from Alaska Sablefish fisheries on threatened and endangered species is monitored and regulated by NMFS with cooperation by ADFG. Exceedance of allowable take by participants in Alaskan Sablefish fishery is subject to prosecution and severe penalties.

Regulations are in place to address any endangered species interactions in the sablefish fisheries. NMFS, and ADFG promulgate these regulations through the Commission, the NPFMC, and the Alaska Board of Fisheries.

**Evidence:**

The U.S. Endangered Species Act is intended to protect species that are in danger of extinction throughout all or a significant portion of their range. The U.S. Fish and Wildlife Service (USFWS) and NMFS maintain lists of species threatened or endangered with extinction. These species receive legal protections that prohibit their “take” (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect or attempt any of these) or destruction of habitat critical to their survival. Impacts from Alaska Sablefish fisheries on threatened and endangered species is monitored and regulated by NMFS with cooperation by ADF&G. Exceedance of allowable take by participants in Alaskan Sablefish fishery is subject to prosecution and severe penalties. Regulations are in place to address and endangered species interactions in the Sablefish fisheries through promulgation of these regulations through NOAA Protected Resources Division and ADFG.

The NOAA Alaska Regional Office Protected Resources Division (PRD)<sup>207</sup> is responsible for implementing marine mammal conservation and recovery programs under the Marine Mammal Protection Act (MMPA) and the Endangered Species Act (ESA) in close coordination with the State of Alaska and other partners.

PRD develops and implements conservation programs for marine mammals including whales, ice seals, harbor seals, northern fur seals, and Steller sea lions; develops and implements recovery programs for threatened and endangered species including Cook Inlet beluga whales, bowhead whales, North Pacific right whales, Steller sea lions, and Arctic ringed seals; coordinates the Alaska Marine Mammal Stranding Network to respond to stranded or entangled marine mammals; consults with federal agencies to minimize the effects of proposed actions on threatened and endangered marine mammals and their critical habitat, such as oil and gas development and coastal construction projects; develops and implements co-management agreements

<sup>207</sup> <https://alaskafisheries.noaa.gov/pr>

with Alaska Native organizations to cooperatively manage subsistence use of marine mammals; works collaboratively with stakeholders to implement guidelines and practices for marine mammal viewing to avoid harassment; conducts reviews to determine if species warrant protection under the ESA or if ESA-listed species no longer need such protection; and analyzes interactions between marine mammals and commercial fisheries to minimize adverse effects.

The Alaska Region has also been actively addressing seabird incidental take in longline (hook-and-line) fisheries off Alaska since 1989. AKR seabird-related responsibilities and activities include: consultations under the Endangered Species Act, data collection by fishery observers, public and industry outreach and education, research, regulatory action, and participation in the development of actions to reduce the incidental take of seabirds in Alaska fisheries. The Alaska Region plays a proactive role in its coordination with local, regional, national, and international agencies, organizations, and experts in its efforts to reduce seabird incidental take in hook-and-line fisheries.

The short-tailed albatross (*Phoebastria albatrus*) is a listed species under the Endangered Species Act (ESA)<sup>208</sup>. Because the endangered short-tailed albatross (*Phoebastria albatrus*) occurs in areas where commercial fisheries occur off Alaska, NMFS engages in required section 7 Endangered Species Act (ESA) consultations with the U.S. Fish & Wildlife Service (USFWS), the federal agency with trust responsibility for seabirds. Short-tailed albatrosses have been observed from commercial fishing vessels off Alaska and several have been reported taken. The USFWS has issued Biological Opinions that address the potential effects of the Alaska Sablefish hook-and-line fishery and the Bering Sea/Aleutian Islands (BSAI) and Gulf of Alaska (GOA) hook-and-line groundfish fisheries on the endangered short-tailed albatross. The USFWS Biological Opinions state that these fisheries are not likely to jeopardize the continued existence of the short-tailed albatross. But because incidental take in the fisheries is possible, an incidental take limit has been established for each fishery. Every 2 years, beginning with 2016-2017, up to 6 short-tailed albatrosses are allowed in the BSAI and GOA groundfish hook-and-line or trawl fisheries. Up to 2 short-tailed albatrosses are allowed in the Alaska Sablefish fishery off Alaska. If either take limit were to be exceeded, NMFS would immediately re-initiate consultation with USFWS to consider possible modifications of the reasonable and prudent measures established to minimize the impacts of the incidental take.

Specific regulations to reduce the incidental mortality of, the endangered short-tailed albatross now include the use of streamer (tory) lines, night setting, lineshooters and lining tubes, have been shown to reduce seabird interactions when setting or retrieving gear. As a consequence The world population is currently estimated to be about 3,000 birds and is increasing at a rate of between 5 and 8% per year<sup>209</sup>

<b>References:</b>	
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>

<sup>208</sup> <https://alaskafisheries.noaa.gov/pr/seabird-bycatch-reduction-history>

<sup>209</sup> [https://www.fws.gov/alaska/fisheries/fieldoffice/anchorage/endangered/pdf/factsheet\\_stal.pdf](https://www.fws.gov/alaska/fisheries/fieldoffice/anchorage/endangered/pdf/factsheet_stal.pdf)

**Supporting Clause 12.13**

There shall be outcome indicator(s) consistent with achieving management objectives for avoiding, minimizing or mitigating the impacts of the unit of certification on essential habitats for the “stock under consideration” and on habitats that are highly vulnerable to damage by the fishing gear of the unit of certification.

FAO ECO (2011) 41.3

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input checked="" type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>

**Summary Evidence:**

NPFMC Fisheries management plans for BSAI/GOA groundfish fisheries provide clear management guidelines and outcome indicators for the protection of essential fish habitats for many groundfish species and vulnerable habitats.

**Evidence:**

NPFMC Fisheries management plans for BSAI/GOA groundfish fisheries provide clear management guidelines and outcome indicators for the protection of essential fish habitats for many groundfish species and vulnerable habitats.

In 2010, an EFH 5-year Review evaluated new information on EFH since the EFH<sup>210</sup> EIS, assessed information gaps and research needs, and identified whether any revisions to EFH were needed or suggested. Acting on this report, the Council initiated FMP amendments for all six Council FMPs, which updated several species descriptions, changed the HAPC process timing to occur simultaneously with each 5-year review, and revised EFH research priorities (implemented Oct 2012). The EFH review also identified that further investigation is needed for red king crab habitats, which the Council has been following up on a separate track.

Currently, the 2015 EFH 5-year Review is developing new analytical methods to describe EFH, updating the 2005 EFH Fishing Effects Model, and investigating non-fishing effects on EFH. EFH descriptions for all managed species within the Council’s six FMPs will be re-evaluated as part of the 5-year review. Since the 2010 EFH review, new habitat information is available that may allow EFH descriptions to be refined for some stocks. The EFH final rule identified four types of information on which to base EFH descriptions, categorized into levels:

- Level 1 – distribution data are available for some or all portions of the geographic range of the species
- Level 2 – Habitat-related densities of the species are available
- Level 3 – Growth, reproduction, or survival rates within habitats are available
- Level 4 – Production rates by habitat are available

Currently, stocks managed in the Council FMPs are all described either using Level 1 distribution data, or are stocks for which no EFH information is available at all. The technical subgroup for EFH description methodology is tasked with developing a methodology to apply level 2 and/or level 3 data to stocks that have additional information available. The subgroup will determine whether a different methodology is warranted for different FMPs, for example, groundfish, salmon, crab, or scallop species.

<sup>210</sup> <http://www.npfmc.org/habitat-protections/essential-fish-habitat-efh/>

If the review indicates that substantial new information is available, the report will recommend potential revisions for each relevant FMP. For example, this could take the form of revised EFH descriptions for certain stocks, or an update to the analysis of the effects of fishing or non-fishing on EFH. The Council will then consider this information, and initiate action (proposed FMP amendments) if it is warranted, or conclude that no further action is needed.

#### **Potential outcomes of the 2015 5-year review**

- New methodology for describing EFH with data other than distribution data
- New EFH descriptions for some stocks, for which more habitat information is available
- Updated habitat information on stocks in the FMPs
- A priority list of stocks habitat assessment
- Updated fishing effects model, may provide new information as to whether or not fishing may be having more than minimal and less than temporary effects on EFH
- A Council discussion of whether to identify HAPC priorities, and initiate a call for HAPC proposals
- Improved means to assess non-fishing effects on EFH
- Protection of vulnerable Habitats<sup>211</sup>

Structural habitat includes boulders, corals, anemones, kelp, and other living organisms attached to the ocean bottom. Because fishing gear has the potential to disturb structural habitat, regulations have been implemented to protect areas where this habitat type is known to occur. Vast areas of the North Pacific have been permanently closed to groundfish trawling and scallop dredging to reduce potential adverse impacts on sensitive habitat and to protect benthic invertebrates. These marine protected areas comprise a relatively large portion of the continental shelf, and in many respects, serve as marine reserves. In addition, fishery closures established in nearshore areas to reduce interactions with Steller sea lions have ancillary benefits of reducing habitat impacts as well.

All fishery management plans include a description and identification of essential fish habitat, adverse impacts, and actions to conserve and enhance habitat. Maps of essential fish habitat areas are useful for understanding potential effects of proposed development and other activities

#### **Aleutian Islands**

In February 2005, the Council adopted several new closure areas to conserve EFH. To minimize the effects of fishing on EFH, and more specifically to address concerns about the impacts of bottom trawling on benthic habitat (particularly on coral communities) in the Aleutian Islands, the Council took action to prohibit all bottom trawling in the Aleutians, except in small discrete “open” areas. Over 95% of the management area is closed to bottom trawling (277,100 nm<sup>2</sup>). Additionally, six Habitat Conservation Zones with especially high density coral and sponge habitat were closed to all bottom-contact fishing gear (longlines, pots, trawls). These “coral garden” areas, which total 110 nm<sup>2</sup>, are essentially marine reserves. To improve monitoring and enforcement of the Aleutian Island closures, a vessel monitoring system is required for all fishing vessels in the Aleutian management area. Additionally, the Council adopted several new HAPCs. The Alaska Seamount Habitat Protection Area encompasses all 16 seamounts in Federal waters off Alaska, named on NOAA charts, of which one occurs in the Aleutian Islands (Bowers). Bottom-contact fishing is prohibited in this HAPC.

The Aleutian Islands Coral Habitat Protection Area designates six areas where submersible observations of high density coral have been made. All bottom-contact gear (longlines, trawls, pots, dinglebar gear, etc.) is

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<sup>211</sup> <http://www.npfmc.org/habitat-protections/>

prohibited in these areas. The relatively unexplored Bowers Ridge is also identified as a HAPC. As a precautionary measure, the Council prohibited mobile fishing gear that contacts the bottom within this 5,286 nm<sup>2</sup> area.

**Bering Sea**

In June 2007, the Council adopted precautionary measures to conserve benthic fish habitat in the Bering Sea by “freezing the footprint” of bottom trawling by limiting trawl effort only to those areas more recently trawled. Implemented in 2008, the new measures prohibit bottom trawling in a deep slope and basin area (47,000 nm<sup>2</sup>), and three habitat conservation areas around St Matthew Island, St Lawrence Island, and an area encompassing Nunivak Island-Etolin Strait-Kuskokwim Bay. The Council also established the Northern Bering Sea Research Area that includes the shelf waters to the north of St. Matthew Island (85,000 nm<sup>2</sup>). The entire Northern Bering Sea Research Area will be closed to bottom trawling while a research plan is developed.

**Gulf of Alaska**

Also in February 2005, bottom trawling for all groundfish species was prohibited in 10 designated areas along the continental shelf of the Gulf of Alaska. The GOA Slope Habitat Conservation Areas, which are thought to contain high relief bottom and coral communities, total 2,086 nm<sup>2</sup>.

Additionally, the Council adopted several new HAPCs. The Alaska Seamount Habitat Protection Area encompasses all 16 seamounts in Federal waters off Alaska, named on NOAA charts, fifteen of which are in the Gulf of Alaska (Brown, Chirikikof, Marchand, Dall, Denson, Derickson, Dickins, Giacomini, Kodiak, Odessey, Patton, Quinn, Sirius, Unimak, and Welker). Bottom-contact fishing is prohibited in all of these HAPCs, an area which totals 5,329 nm<sup>2</sup>.

In Southeast Alaska, three sites with large aggregations (“thickets”) of long-lived Primnoa coral are also identified as HAPCs. These sites, in the vicinity of Cape Ommaney and Fairweather grounds, total 67 nm<sup>2</sup>. The Gulf of Alaska Coral Habitat Protection Area designates five zones within these sites where submersible observations have been made, totaling 13.5 nm<sup>2</sup>. All bottom-contact gear (longlines, trawls, pots, dinglebar gear, etc.) is prohibited in this area.

**Arctic**

In 2009, an Arctic Fisheries Management Plan was implemented. The plan covers the Arctic waters of the United States in the Chukchi and Beaufort seas. Warming ocean temperatures, migrating fish stocks and shifting sea ice conditions from a changing climate may potentially favor the development of commercial fisheries. The plan establishes a framework for sustainably managing Arctic marine resources. It initially prohibits commercial fishing in the Arctic waters of the region until more information is available to support sustainable fisheries management (an area roughly 150,000 sq nm<sup>2</sup>).

All of these combinations of measures such as habitat closures, proliferation of non trawlable areas support mitigation activities to protect sablefish habitats and populations

<b>References:</b>	
<b>Non-Conformance Number (if relevant)</b>	<b>NA</b>

**Supporting Clause 12.14**

There shall be outcome indicator(s) consistent with achieving management objectives that seek to avoid severe adverse impacts on dependent predators resulting from the unit of certification fishing on a stock under consideration that is a key prey species.

FAO ECO (2011) 41.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input type="checkbox"/>	
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input type="checkbox"/>
<p><b>Summary Evidence:</b>                  Alaska Sablefish are not typically categorized as a key prey species for any single marine predator. Several comprehensive studies of the food web in various regions of the northern Pacific Ocean have not indicated that sablefish are heavily utilized by any predator. Predation on Alaska Sablefish, especially by marine mammals, is apparently low, except in cases where the fish were attached to fishing gear. This is understandable, because adult sablefish are large, active animals that would be difficult to capture in open water. Also, their bottom dwelling habits, generally in offshore areas, make them less accessible to predation than schooling, pelagic species.</p> <p>Alaska Sablefish are not a key prey species; as such this Clause is <b>NOT APPLICABLE</b>.</p>				
<p><b>Evidence:</b>                  Alaska Sablefish are not a key prey species; as such this Clause is <b>NOT APPLICABLE</b>.</p>				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>	

**Supporting Clause 12.15**

There shall be outcome indicator(s) consistent with achieving management objectives that seek to minimize adverse impacts of the unit of certification, including any enhancement activities, on the structure, processes and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible. Any modifications to the habitat for enhancing the stock under consideration must be reversible and not cause serious or irreversible harm to the natural ecosystem’s structure, processes and function.

FAO ECO (2011) 36.9, 41

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input type="checkbox"/>
<b>Summary Evidence:</b> There is no evidence to suggest that either Alaska Sablefish, or species with similar biological characteristics, have benefitted from the use of artificial structures. The use of artificial structures is neither practical nor appropriate for Alaska Sablefish. There is no use of artificial structures for the benefit of the north Eastern Alaska Sablefish stock; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>Evidence:</b> There is no use of artificial structures for the benefit of the Alaska Sablefish stock; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**7.13. Fundamental Clause 13**

Where fisheries enhancement is utilized, environmental assessment and monitoring shall consider genetic diversity and ecosystem integrity.

FAO CCRF (1995) 9.1.2/9.1.3/9.1.4/9.1.5/9.3.1/9.3.5  
 FAO Eco (2011) 36.9,38, 39, 40, 41, 43

<b>No. Supporting clauses/sub-clauses</b>	19
<b>Supporting clauses applicable</b>	0
<b>Supporting clauses not applicable</b>	19
<b>Non-Conformances</b>	0

**Supporting Clause 13.1**

State shall promote responsible development and management of aquaculture, including an advanced evaluation of the effects of aquaculture development on genetic diversity and ecosystem integrity, based on the best available scientific information (and/or traditional, fisher or community objective and verifiable knowledge). Significant uncertainty is to be expected in assessing possible adverse ecosystem impacts of fisheries, including culture and enhancement activities. This issue can be addressed by taking a risk assessment/risk management approach.

FAO CCRF (1995) 9.1.2  
 FAO Eco (2011) 41

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> The Alaska Sablefish Commercial Fishery is not an enhanced fishery; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>Evidence:</b> The Alaska Sablefish Commercial Fishery is not an enhanced fishery; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>



**Supporting Clause 13.1.1**

In the case of enhanced fisheries, the fishery management system should take due regard of the natural production processes and be appropriate for the conservation of genetic diversity, biodiversity, protection of endangered species, maintenance of integrity of aquatic communities and ecosystems, minimizing adverse impacts on ecosystem structure and function.

FAO CCRF (1995) 9.3.1  
 FAO Eco (2011) 36.9, 41

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> The Alaska Sablefish Commercial Fishery is not an enhanced fishery; as such this Clause is <b>NOT APPLICABLE.</b>				
<b>Evidence:</b> The Alaska Sablefish Commercial Fishery is not an enhanced fishery; as such this Clause is <b>NOT APPLICABLE.</b>				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 13.2**

State shall produce and regularly update aquaculture development strategies and plans, as required, to ensure that aquaculture development is ecologically sustainable and to allow the rational use of resources shared by aquaculture and other activities.

FAO CCRF (1995) 9.1.3

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> The Alaska Sablefish Commercial Fishery is not an enhanced fishery; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>Evidence:</b> The Alaska Sablefish Commercial Fishery is not an enhanced fishery; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

**Supporting Clause 13.2.1**

State shall ensure that the livelihoods of local communities, and their access to fishing grounds, are not negatively affected by aquaculture developments.

FAO CCRF (1995) 9.1.4

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> The Alaska Sablefish Commercial Fishery is not an enhanced fishery and as a result there are no aquaculture developments; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>Evidence:</b> The Alaska Sablefish Commercial Fishery is not an enhanced fishery and as a result there are no aquaculture developments; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 13.3**

Effective procedures specific to aquaculture of fisheries enhancement shall be established to undertake appropriate environmental assessment and monitoring with the aim of minimizing adverse ecological changes such as those caused by inputs from enhancement activities and related economic and social consequences.

FAO CCRF (1995) 9.1.5/9.2.5

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> The Alaska Sablefish Commercial Fishery is not an enhanced fishery; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>Evidence:</b> The Alaska Sablefish Commercial Fishery is not an enhanced fishery; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

**Supporting Clause 13.4**

With due regard to the assessment approach employed, stock assessment of fisheries that are enhanced through aquaculture inputs shall consider the separate contributions from aquaculture and natural production.

FAO Eco (2011) 43

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> The Alaska Sablefish Commercial Fishery is not an enhanced fishery so there is no need to consider the separate contributions from aquaculture and natural production; as such this Clause is <b>NOT APPLICABLE.</b>				
<b>Evidence:</b> The Alaska Sablefish Commercial Fishery is not an enhanced fishery so there is no need to consider the separate contributions from aquaculture and natural production; as such this Clause is <b>NOT APPLICABLE.</b>				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 13.5**

Any modification to the habitat for enhancing the stock under consideration is reversible and do not cause serious or irreversible harm to the natural ecosystem’s structure and function.

FAO Eco (2011) 41

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> There is no evidence to suggest that either Alaska Sablefish, or species with similar biological characteristics, have benefitted from the use of artificial structures. The use of artificial structures is neither practical nor appropriate for Alaska Sablefish. There is no use of artificial structures for the benefit of the stock; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>Evidence:</b> There is no use of artificial structures for the benefit of the Alaska Sablefish stock; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 13.5.1**

Efforts shall be undertaken to minimize the harmful effects of introducing non-native species or genetically altered stocks used for aquaculture including culture based fisheries into waters.

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> There is no introduction program for (including non-native species or genetically altered stocks) for the benefit of the Alaska Sablefish stock; as such this Clause is <b>NOT APPLICABLE.</b>				
<b>Evidence:</b> There is no introduction program for (including non-native species or genetically altered stocks) for the benefit of Alaska Sablefish stock; as such this Clause is <b>NOT APPLICABLE.</b>				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 13.5.2**

Steps shall be taken to minimize adverse genetic disease and other effects of escaped farmed fish on wild stocks.  
 FAO CCRF (1995) 9.3.1

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> Alaska Sablefish is not a farmed fish. There is no farming of Alaska Sablefish with the potential to impact wild stocks; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>Evidence:</b> Alaska Sablefish is not a farmed fish. There is no farming of Alaska Sablefish with the potential to impact wild stocks; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>



**Supporting Clause 13.5.3**

Research shall be promoted to develop culture techniques for endangered species to protect, rehabilitate and enhance their stocks, taking into account the critical need to conserve genetic diversity of endangered species.

FAO CCRF (1995) 9.3.5

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> Alaska Sablefish is not an endangered species. There is no need for research to develop culture techniques for the protection, rehabilitation and enhancement of the stock; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>Evidence:</b> Alaska Sablefish is not an endangered species. There is no need for research to develop culture techniques for the protection, rehabilitation and enhancement of the stock; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 13.6**

State shall protect transboundary aquatic ecosystems by supporting responsible aquaculture practices within their national jurisdiction and by cooperation in the promotion of sustainable aquaculture practices.

FAO CCRF (1995) 9.2.1

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> No aquaculture practices occur for Alaska Sablefish; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>Evidence:</b> No aquaculture practices occur for Alaska Sablefish; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

**Supporting Clause 13.7**

State shall, with due respect to their neighboring States and in accordance with international law, ensure responsible choice of species, siting and management of aquaculture activities which could affect trans boundary aquatic ecosystems.

FAO CCRF (1995) 9.2.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> No aquaculture activities occur for Alaska Sablefish; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>Evidence:</b> No aquaculture activities occur for Alaska Sablefish; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

**Supporting Clause 13.8**

State shall consult with their neighboring States, as appropriate, before introducing non-indigenous species into trans-boundary aquatic ecosystems.

FAO CCRF (1995) 9.2.3

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> There is no introduction of non-indigenous species for enhancement of Alaska Sablefish; as such this Clause is <b>NOT APPLICABLE.</b>				
<b>Evidence:</b> There is no introduction of non-indigenous species for enhancement of Alaska Sablefish; as such this Clause is <b>NOT APPLICABLE.</b>				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 13.9**

State shall establish appropriate mechanisms, such as databases and information networks to collect, share and disseminate data related to their aquaculture activities to facilitate cooperation on planning for aquaculture development at the national, sub-regional, regional and global level.

FAO CCRF (1995) 9.2.4

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> No aquaculture activities occur for Alaska Sablefish; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>Evidence:</b> No aquaculture activities exist for this fishery. No aquaculture activities occur for Alaska Sablefish; as such this Clause is <b>NOT APPLICABLE</b> .			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>

**Supporting Clause 13.10**

State shall cooperate in the elaboration, adoption and implementation of international codes of practice and procedures for introductions and transfers of aquatic organisms.

FAO CCRF (1995) 9.3.2

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> There is no introduction of non-indigenous species for enhancement of Alaska Sablefish; as such this Clause is <b>NOT APPLICABLE.</b>				
<b>Evidence:</b> There is no introduction of non-indigenous species for enhancement of Alaska Sablefish; as such this Clause is <b>NOT APPLICABLE.</b>				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 13.11**

States shall, in order to minimize risks of disease transfer and other adverse effects on wild and cultured stocks, encourage adoption and promote the use of appropriate practices/procedures in the selection and genetic improvement of broodstocks, the introduction of non-native species, and in the production, sale and transport of eggs, larvae, fry, broodstock or other live materials. States shall facilitate the preparation and implementation of appropriate national codes of practice and procedures to this effect.

FAO CCRF (1995) 9.3.3, 9.3.4

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> There is no introduction of non-indigenous species for enhancement of Alaska Sablefish; as such this Clause is <b>NOT APPLICABLE.</b>				
<b>Evidence:</b> There is no introduction of non-indigenous species for enhancement of Alaska Sablefish; as such this Clause is <b>NOT APPLICABLE.</b>				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 13.12**

Enhanced fisheries may be supported in part by stocking of organisms produced in aquaculture facilities or removed from wild stocks other than the “stock under consideration”. Aquaculture production for stocking purposes should be managed and developed according to the above provisions, especially in relation to maintaining the integrity of the environment, the conservation of genetic diversity, disease control, and quality of stocking material.

FAO Eco (2011) 36.8, 40

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>	High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>
			None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> The Alaska Sablefish Commercial Fishery is not an enhanced fishery; as such this Clause is <b>NOT APPLICABLE.</b>			
<b>Evidence:</b> The Alaska Sablefish Commercial Fishery is not an enhanced fishery; as such this Clause is <b>NOT APPLICABLE.</b>			
<b>References:</b>			
<b>Non-Conformance Number (if relevant)</b>			<b>NA</b>



**Supporting Clause 13.13**

Regarding the enhanced components of the “stock under consideration”, provided that a natural reproductive stock component is maintained and fishery production is based primarily on natural biological production within the ecosystem of which the “stock under consideration” forms a part, enhanced fisheries shall meet the following criteria:

- the species shall be native to the fishery’s geographic area or introduced historically and have subsequently become established as part of the “natural” ecosystem;
- there shall be natural reproductive components of the “stock under consideration”;
- the growth during the post-release phase shall be based upon food supply from the natural environment and the production system shall operate without supplemental feeding.

FAO Eco (2011) 38

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> The Alaska Sablefish Commercial Fishery is not an enhanced fishery; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>Evidence:</b> The Alaska Sablefish Commercial Fishery is not an enhanced fishery; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

**Supporting Clause 13.14**

In the case of enhanced fisheries, “stock under consideration” may comprise naturally reproductive components and components maintained by stocking. In the context of avoiding significant negative impacts of enhancement activities on the natural reproductive components of “stock under consideration”:

- naturally reproductive components of enhanced stocks shall not be overfished;
- naturally reproductive components of enhanced stocks shall not be substantially displaced by stocked components. In particular, displacement shall not result in a reduction of the natural reproductive stock component below abundance-based target reference points (or their proxies) defined for the regulation of harvest.

FAO Eco (2011) 39

<b>Evidence Rating:</b>	Low <input type="checkbox"/>	Medium <input type="checkbox"/>		High <input type="checkbox"/>
<b>Non-Conformance:</b>	Critical <input type="checkbox"/>	Major <input type="checkbox"/>	Minor <input type="checkbox"/>	None <input checked="" type="checkbox"/>
<b>Summary Evidence:</b> The Alaska Sablefish Commercial fishery is not an enhanced fishery; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>Evidence:</b> The Alaska Sablefish Commercial fishery is not an enhanced fishery; as such this Clause is <b>NOT APPLICABLE</b> .				
<b>References:</b>				
<b>Non-Conformance Number (if relevant)</b>				<b>NA</b>

## 8. External Peer Review

### 8.1. Summary and Recommendation Peer Reviewer 1

Overall the assessment team was thorough and documented the evidence ratings and conformance of each supporting clause adequately to evaluate the appropriateness of reassessment. My response below will document my general and specific comments to each of the evaluation clauses. The assessment team provided a rigorous and sufficiently critical analysis of each of the six components of certification. Given the information provided to me in the report the appropriate conclusion that this is a responsibly managed fishery. I agree with the assessment team that the fishery under consideration should be awarded continuing certification.

#### 8.1.1. Full Summary of Comments – Peer Reviewer 1

<b>Background Section</b>	
<b>Peer Review Comments:</b> Mateo et al. had a keen attention to detail and their knowledge of the dynamics of the stock, the ecosystem ramifications, and the management setting were clear and well communicated.	

<b>A.</b>	<b>The Fishery Management System</b>
<b>1.</b>	<b>There shall be a structured and legally mandated management system based upon and respecting International, National and local fishery laws, for the responsible utilization of the stock under consideration and conservation of the marine environment.</b>

**Peer Review Comments:**  
The assessment team provided evidence and documentation of the various legally-mandated management systems that partner in the assessment, management, and enforcement of fishery legislation. This level of management satisfied the assessment criteria.

<b>2.</b>	<b>Management organizations shall participate in coastal area management institutional frameworks, decision-making processes and activities related to the fishery and its users, in support of sustainable and integrated resource use, and conflict avoidance.</b>
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**Peer Review Comments:**  
The assessment team provided evidence and documentation of the various legally-mandated management systems that partner in the assessment, management, and enforcement of fishery legislation. This level of management satisfied the assessment criteria and addressed in the 10 supporting applicable clauses. The management system at the state and federal jurisdictional levels that provide a sufficient management and legal framework for the regulation of the fishery. There is evidence and consideration indicates that the stock unit, though trans-boundary is managed across its range. Regarding the portion of the stock that occupies Canada, there is sufficient information to conclude that sufficient exchange of scientific information is performed to adequately manage the stock. The other considerations of transparency, efficacy of management, and integration of stakeholder input are all satisfied.

<b>A.</b>	<b>The Fishery Management System</b>
<b>3.</b>	<b>Management objectives shall be implemented through management rules and actions formulated in a plan or other framework.</b>
<p><b>Peer Review Comments:</b>                  Management objectives are robust and are codified in the fishery management plan for the stock.</p>	

<b>B.</b>	<b>Science and Stock Assessment Activities</b>
<b>4.</b>	<b>There shall be effective fishery data (dependent and independent) collection and analysis systems for stock management purposes.</b>
<p><b>Peer Review Comments:</b>                  Agreed, they include all sources of fishery removal, a variety of data reporting systems exist and these data are publically available. There is high confidence that the catch and fishing effort well monitored and that these data are utilized in a rigorous quantitative assessment of the stock and fishery dynamics. Data collection activities are consistent with international standards. Untargeted by catch is quantified and addressed in the fishery management plan, as well as assessed quantitatively.</p>	
<b>5.</b>	<b>There shall be regular stock assessment activities appropriate for the fishery, its range, the species biology and the ecosystem, undertaken in accordance with acknowledged scientific standards to support its optimum utilization.</b>
<p><b>Peer Review Comments:</b>                  A robust, scientifically-based stock assessment is undertaken using established state of the art methods and in addition to describing the fishery and stock dynamics, also addresses the economics of the fishery and ecosystem considerations. The assessment is conducted by federal and state-level scientists and managers from agencies with significant research capacity and a history of constructing state of the art stock assessments for a variety of stocks in the region. The region, its ecosystem, and the biology and dynamics of the sablefish stock are well studied by university, state, and federal agency personnel.</p>	

<b>C.</b>	<b>The Precautionary Approach</b>
<b>6.</b>	<b>The current state of the stock shall be defined in relation to reference points or relevant proxies or verifiable substitutes allowing for effective management objectives and targets. Remedial actions shall be available and taken where reference point or other suitable proxies are approached or exceeded.</b>
<p>The sablefish stock is under the mandate of the MSA and thus requires that conservation and fishery management measures prevent overfishing while achieving optimum yield. Under this management framework the NPFMC (North Pacific Fishery Management Council) mandates harvest rules consistent with the assigned tier – the tier system specifies fishery reference points. Sablefish is considered a tier 3 stock, MSY cannot be estimated with confidence, and thus a proxy is used.</p>	

<b>C.</b>	<b>The Precautionary Approach</b>
<b>7.</b>	<b>Management actions and measures for the conservation of stock and the aquatic environment shall be based on the precautionary approach. Where information is deficient a suitable method using risk assessment shall be adopted to take into account uncertainty.</b>
<p><b>Peer Review Comments:</b>                  Because Sablefish is considered a tier 3 stock, MSY cannot be estimated with confidence, and thus a proxy is used and the NPFMC has established reference points consistent with the precautionary approach. There is sufficient justification that a risk averse strategy is in place for the determination of whether stocks exceed fishery reference points. Such reference points are evaluated with an understanding of the process, measurement, and model uncertainty.</p>	

<b>D.</b>	<b>Management Measures</b>
<b>8.</b>	<b>Management shall adopt and implement effective management measures designed to maintain stocks at levels capable of producing maximum sustainable yields, including harvest control rules and technical measures applicable to sustainable utilization of the fishery and be based upon verifiable evidence and advice from available scientific and objective, traditional sources.</b>
<p><b>Peer Review Comments:</b>                  The multi-tier system established by the NPFMC in their evaluation of the stock, relative to fishery management points ensures sustainable utilization of the stock.</p>	
<b>9.</b>	<b>Fishing operations shall be carried out by fishers with appropriate standards of competence in accordance with international standards and guidelines and regulations.</b>
<p><b>Peer Review Comments:</b>                  The state of Alaska has an extensive training program for its fishers and is well controlled. Entry of participants is regulated.</p>	

<b>E.</b>	<b>Implementation, Monitoring and Control</b>
<b>10.</b>	<b>An effective legal and administrative framework shall be established and compliance ensured through effective mechanisms for monitoring, surveillance, control and enforcement for all fishing activities within the jurisdiction.</b>
<p><b>Peer Review Comments:</b>                  Monitoring and enforcement of the Sablefish fishery is extensive and includes the evaluation of the impact of the fishery on habitats, protected and endangered resources and accounts, quantitatively with discards. Similarly, gear restrictions are in place as are area closures zones for trawls and longline gears in some habitats. There exists a suite of regulations that are consistent with international standards.</p>	

<b>E.</b>	<b>Implementation, Monitoring and Control</b>
<b>11.</b>	There shall be a framework for sanctions for violations and illegal activities of adequate severity to support compliance and discourage violations.
<p><b>Peer Review Comments:</b>                  There exists federal and state regulations that determine the penalties for non-conformance with sablefish fishery regulations including fines and prohibition from the fishery. The enforcement of regulations occurs at the state and federal levels.</p>	

<b>F.</b>	<b>Serious Impacts of the Fishery on the Ecosystem</b>
<b>12.</b>	Considerations of fishery interactions and effects on the ecosystem shall be based on best available science, local knowledge where it can be objectively verified and using a risk based management approach for determining most probable adverse impacts. Adverse impacts of the fishery on the ecosystem shall be appropriately assessed and effectively addressed.
<p><b>Peer Review Comments:</b>                  Management and assessment implicitly considers the potential of the fishery to adversely harm the ecosystem. A number of ecosystem-level investigations have been undertaken to understand the potential deleterious impacts of harvest of living marine resources from the ecosystem. This stock, like all living resources, plays a role in the trophic dynamics of the system and are impacted by the ecosystem conditions. Based on the report this seems to be an active area of investigation and is being considered in the assessment.</p>	
<b>13.</b>	Where fisheries enhancement is utilized, environmental assessment and monitoring shall consider genetic diversity and ecosystem integrity.
<p><b>Peer Review Comments:</b>                  Not applicable to this stock.</p>	

Assessment Team Response: The assessment team thanks the peer reviewer for comments.

## 8.2. Summary and Recommendation Peer Reviewer 2

1 October 2016

The re-certification report for the Alaska Pacific Sablefish (Black cod) Commercial Fishery (200 nm EEZ) concludes that the fishery meets the requirements of the Alaska Responsible Fisheries Management (RFM) Standard Version 1.3. The assessment report is extensive and provides detailed information as evidence in support of the positive determination. Based on my review of this report, it seems evident that the Alaska sablefish fishery is managed responsibly and could be reasonably regarded as a sustainable fishery. However the assessment report also has deficiencies: it is internally inconsistent in some key places and it omits some important considerations. These deficiencies make it difficult to confirm the basis for a positive recommendation for certification of the Alaska sablefish fishery. My four main concerns are outlined below and presented in more detail in subsequent sections.

First, there is concern that the assessment report does not consistently identify which gear type(s) are under assessment and, hence, which gears are properly specified as part of the unit of certification. In Section (i), the assessment team recommends that the management system of the applicant fishery, the US Alaska Sablefish fishery, under federal (NMFS/NPFMC) and state (ADFG) management, fished with benthic longline, pots and trawl gear (within Alaska's 200 nm EEZ), should be awarded continuing certification. However parts of the introduction and many of the report's evidence sections (e.g. 3.2.5-6, 8.7, 8.9) consider longline gear to the exclusion of the other gear types used to catch sablefish including pot, longline pot, and trawl. It is essential that relevant gear types are precisely identified so that full evidence of fishery compliance with the RFM Standard can be established unambiguously.

Second, many sections of the report seem to cover general aspects of the Alaska fisheries management framework, processes and strategies rather than presenting information which is specific to the management of the directed sablefish fishery. In some cases, the report relies on evidence taken from fisheries *other* than Alaska sablefish (e.g. Alaska halibut or salmon fisheries). This approach makes it difficult to discern the performance of the sablefish fishery in its own right against the RFM Standard.

Third, some sections of the assessment report do not address in a direct way the threshold level of performance which is established in the supporting clause. As a result, some clauses lack sufficient evidence to evaluate performance of the sablefish fishery. Two examples: only qualitative information is given about observer coverage for the sablefish fishery; and the report lacks a concise description of measures taken to reduce waste of non-target species (e.g. grenadiers) in the sablefish fishery.

Lastly, it is not clear from the report how the currently accepted stock boundaries for Pacific sablefish were assessed against the requirement of the RFM Standard to consider the 'whole stock biological unit' (supporting clause 1.2). The report does not present a complete picture of sablefish distribution nor does it cite studies that would provide evidence for the existence of a western stock boundary which separates eastern Pacific sablefish from a western population. The authors should clarify this matter in the report.

#### Assessment Team Response:

The assessment team thanks the peer reviewer for comprehensive comments. Each specific comment is addressed separately and a responses in the peer review table for each comment is provided on how the comment has been addressed the assessment team.

#### 8.2.1. Full Summary of Comments – Peer Reviewer 2

Background Section
<p><b>Peer Review Comments:</b></p> <p>The report gives an inconsistent description of the gear type(s) under assessment. Examples where only longline is specified or implied: first paragraph of introduction (p.12), section 1.1 recommendation of assessment team (p.13), description of fishing gear (p.20). Examples where multiple gear types are specified or implied: Section i summary and recommendation (p.9), Section 3.3 on fishing method (p. 17-19), Figure 3 (p. 18), Figure 4 (p.19), section 6.1 conformity statement (p.32).</p> <p>On p.17, it is said that Pot fishing is banned in the GOA. This statement should be updated to reflect forthcoming regulatory changes being introduced by the NPFMC that will allow pot fishing in GOA (see comment on 8.11).</p>

Background Section
<p>On p.17 text added to reflect current state of regulation on pot fishing for sablefish in GOA (footnote added with link to proposed rule on Federal register).</p> <p><u>Sablefish stock structure</u>: With respect to sablefish stock structure, a number of points could be clarified.</p> <p>1) “Sablefish (<i>Anoplopoma fimbria</i>) inhabit the North Eastern Pacific Ocean from northern Mexico to the GOA, westward to the Aleutian Islands, and into the Bering Sea (Wolotira et al. 1993)” (p.15). This passage seems to ignore the wider distribution of sablefish which includes the western Pacific. According to Fishbase, sablefish distribution is: North Pacific: Bering Sea coasts of Kamchatka, Russia and Alaska southward to Hatsu Shima Island, southern Japan and Cedros Island, central Baja California, Mexico.  <a href="#">Additional text added for clarification along with new figure depicting the known range of sablefish under “Distribution” sub-heading</a></p> <p>2) “Federally managed sablefish found in the Bering Sea and in the GOA are considered one population with migration occurring between these regions (p. 16).” This passage implies that the management boundary coincides with a natural (i.e. biological) population boundary. It is unclear why this would be the case. There is some evidence to support a hypothesis of panmixia of sablefish in the eastern Bering Sea (Jasonowicz et al. 2016) but none of the documents cited in the assessment report suggest that eastern and western sablefish populations should be separated as distinct biological units. Please clarify.  <a href="#">Extensive text added addressing this issue including the creation of a “Stock structure” sub-heading</a></p> <p>3) “Sablefish in spawning condition were also noted as far west as Kamchatka in November and December (Orlov and Biryukov 2005) (p.15).” This suggests that there is potential for sablefish reproduction to occur in the western Pacific but it is unclear how the assessment team considers this piece of information in the context of a biological unit of sablefish in the north Pacific.  <a href="#">See comments for issue 1) and 2) above.</a></p>

A.	The Fishery Management System
1.	<b>There shall be a structured and legally mandated management system based upon and respecting International, National and local fishery laws, for the responsible utilization of the stock under consideration and conservation of the marine environment.</b>

**Peer Review Comments:**

The evidence presented for supporting clause 1.2 does not seem to consider the wider distribution of sablefish, particularly the range outside of the US EEZ. As Johnson et al (2015) recognized, “The resource in U.S. waters of California, Oregon, and Washington is modelled as a single stock, however... sablefish do disperse to some degree to and from offshore seamounts and along the coastal waters of the continental U.S., Canada, Alaska, and across the Aleutian Islands to the western Pacific and this is not explicitly accounted for in this analysis.”

As noted by DFO (2013), “the prevailing population structure hypothesis for north Pacific Sablefish – as originally suggested by tag release-recovery studies (Kimura et al. 1998) – is that two populations potentially exist along the coast of North America. One population is thought to extend northwest from northern Vancouver Island through the Gulf of Alaska, Aleutian Islands, and the Bering Sea. The second population is believed to extend south from northern Vancouver Island to Baja California. Recent genetic analyses failed to detect genotypic differentiation in support of the two-population hypothesis; only weak differentiation was



<b>A.</b>	<b>The Fishery Management System</b>
<p>found between the northern and southern extremes of the Sablefish range (Tripp-Valdez et al. 2012). The lack of apparent biological population structure probably arises because Sablefish are highly mobile at all spatial scales relevant to their life history. As larvae and juveniles, Sablefish are transported by surface currents at scales of 10-100 km; as sub-adults, Sablefish make ontogenetic movements from shallow to deep waters over 100s of kms; and adult Sablefish may make ocean-basin scale movements up to 1000s of kms. Therefore, mixing of members from the putative populations is likely sufficient for Sablefish to be considered <u>one biological population.</u>"</p> <p>DFO. 2013. A Review of Sablefish Population Structure in the Northeast Pacific Ocean and Implications for Canadian Seamount Fisheries. DFO Can. Sci. Advis. Sec. Sci. Resp. 2013/017.</p> <p>The assessment report states that "all sablefish in Alaskan waters are assumed to be part of the same overall stock, studied and managed by NPFMC, NMFS and ADFG, with Alaskan sablefish being unlikely to spend any portion of their life in the jurisdiction of another country (i.e. Canada)." If this assumption is incorrect, then RFM requirement 1.2 would not be met in a fundamental way insofar as management measures would not consider the whole stock biological unit (i.e. structure and composition contributing to its resilience) over its entire area of distribution. The team is asked to clarify this matter in the assessment report.</p> <p><i>Additional text addressing all of the above added in the evidence for Clause 1.2 under heading: "1) Consideration of whole stock biological unit over its entire area of distribution"</i></p> <p>Regarding supporting clause 1.7, the evidence given indicates that, per the MSA, "reviews of LAPPs should occur no less frequently than once every 7 years. In December 2014, NMFS recommended that the NPFMC initiate a formal and comprehensive review of the Halibut and Sablefish IFQ Program. An outline of the proposed scope of the IFQ program review, which will be the first formal and comprehensive review of the program since its implementation in 1995, can be seen on the NPFMC webpage." It appears that the sablefish fishery is out of compliance with requirements of MSA until that review is completed, now having gone almost 21 years without such a review. How does this fulfil supporting clause 1.7 as being an 'established' procedure (i.e. implemented)? Note: Ref 17 -&gt; D4 IFQ Program Review Outline DECEMBER 2015 indicates that the scoping process has begun for this review</p> <p><i>Additional text added including from outline of proposed scope of the IFQ program review: "Because the IFQ program was enacted prior to the 2007 reauthorization of the MSA, it has not been subject to the mandatory review process of LAPPs under the Act."</i></p> <p><i>Additional text added to illustrate the fact that while this will be the first formal and comprehensive review of the IFQ program there have been numerous reviews and reports that provide relevant information with respect to specific provisions in the program (footnotes to five such reports added).</i></p>	
<b>2.</b>	<p><b>Management organizations shall participate in coastal area management institutional frameworks, decision-making processes and activities related to the fishery and its users, in support of sustainable and integrated resource use, and conflict avoidance.</b></p>
<p><b>Peer Review Comments:</b></p> <p>Regarding supporting clause 2.3, the concluding paragraph in the evidence section describes requirements for marking gear buoys. It is unclear how this information relates to the matter of reducing conflict among fishers and other user groups. Its relevance should be clarified or else the text deleted.</p> <p><i>Additional text added clarifying ways in which gear marking helps reduce conflict among fishers.</i></p>	

<b>A.</b>	<b>The Fishery Management System</b>
<b>3.</b>	<b>Management objectives shall be implemented through management rules and actions formulated in a plan or other framework.</b>
<p><b>Peer Review Comments:</b>                  Regarding the evidence in supporting clause 3.2.2, the year in which NMFS instituted a catch sharing mechanism the created quota shares for GOA and BSIA was 1995 - not 2005.  <a href="#">Typo – text corrected</a></p> <p>Regarding the evidence in supporting clause 3.2.5, the team only considers longline gear in their discussion of actions taken by management to avoid/minimize/mitigate impacts to essential habitats. Evidence from longline gears should not be assumed to be sufficient to show that pot and trawl gears also comply with RFM requirements.  <a href="#">Text modified in summary evidence to clarify.</a>  <a href="#">Additional text added to identify the different types of MPAs and to provide weblinks where they may be viewed.</a></p> <p>Regarding the evidence in supporting clause 3.2.6, the team only considers longline gear in their discussion of management objectives to minimize adverse impacts on aquatic ecosystems. Evidence from longline gears should not be assumed to be sufficient to show that pot and trawl gears also comply with RFM requirements.  <a href="#">Text modified in summary evidence to clarify text.</a>  <a href="#">Additional text added to identify the different types of MPAs.</a></p>	

<b>B.</b>	<b>Science and Stock Assessment Activities</b>
<b>4.</b>	<b>There shall be effective fishery data (dependent and independent) collection and analysis systems for stock management purposes.</b>
<p><b>Peer Review Comments:</b>                  Regarding the summary evidence in supporting clause 4.1.1, the text explains that the IPHC (International Pacific Halibut Commission) compiles and maintains all relevant catch and effort statistics for sablefish. This seems to be in error and it is inconsistent with other sections of the report which describe a number of other agencies tasked with responsibility for maintaining fishery statistics for sablefish including AKFIN, NMFS, and NPFMC.  <a href="#">Response- Summary text in 4.1.1 updated to reflect the text in the main part of 4.1.1, and references to IPHC are removed.</a></p> <p>Regarding the evidence in supporting clause 4.1.2, please see previous comments under 1.2.  <a href="#">Response – Addressed with summary info from Section 3.1 on stock structure.</a></p> <p>Regarding the evidence in supporting clause 4.4, the reference to ASMI as a ‘state agency’ is possibly misleading. ASMI describes itself as “...a public-private partnership between the State of Alaska and the Alaska seafood industry established to foster economic development of a renewable natural resource” (ASMI website). Though it is unclear whether this distinction would have affected the team’s conclusion that the fishery complies with supporting clause 4.4.  <a href="#">Response – Revised text in 4.4 reflects correct description of ASMI and its role. No change to compliance.</a></p>	

<b>B.</b>	<b>Science and Stock Assessment Activities</b>
5.	<b>There shall be regular stock assessment activities appropriate for the fishery, its range, the species biology and the ecosystem, undertaken in accordance with acknowledged scientific standards to support its optimum utilization.</b>
<p><b>Peer Review Comments:</b>                  Regarding the evidence in supporting clause 5.4, see comments re sablefish stock boundary under 1.2.  <b>Response – Addressed with summary info to include small scale Russian catches from Section 3.1 on stock structure, acknowledging that Canadian boundary is not the only transboundary issue.</b></p>	

<b>C.</b>	<b>The Precautionary Approach</b>
6.	<b>The current state of the stock shall be defined in relation to reference points or relevant proxies or verifiable substitutes allowing for effective management objectives and targets. Remedial actions shall be available and taken where reference point or other suitable proxies are approached or exceeded.</b>
<p><b>Peer Review Comments:</b> None</p>	
7.	<b>Management actions and measures for the conservation of stock and the aquatic environment shall be based on the precautionary approach. Where information is deficient a suitable method using risk assessment shall be adopted to take into account uncertainty.</b>
<p><b>Peer Review Comments:</b> None</p>	

<b>D.</b>	<b>Management Measures</b>
8.	<b>Management shall adopt and implement effective management measures designed to maintain stocks at levels capable of producing maximum sustainable yields, including harvest control rules and technical measures applicable to sustainable utilization of the fishery and be based upon verifiable evidence and advice from available scientific and objective, traditional sources.</b>
<p><b>Peer Review Comments:</b>                  Regarding the evidence in supporting clause 8.1.1, the report indicates that Alaska state managers use either a Guideline Harvest Level (GHL), which is determined based on harvest history, fishery performance, and the federal survey for the area, or an annual harvest objective (AHO) based on state-based survey and assessment data. Despite the absence of a full suite of reference points for these sablefish resources, the assessment team concludes that state fisheries appear to be well managed. It is not clear how the aforementioned state management targets can be said to be consistent with achieving MSY. By extension, it appears that the sablefish fisheries occurring in state waters do not comply with 8.1.1.  <b>Response – Text at end of 8.1.1 re-written, to note that state-managed fisheries use federal data and reference points where possible, are managed responsibly, and are compliant with this clause.</b></p>	

D.	Management Measures
	<p>Regarding the evidence in supporting clause 8.7, the team only considers longline gear in their discussion of measures to identify and protect depleted resources and those resources threatened with depletion. Evidence from longline gears should not be assumed to be sufficient to show that pot and trawl gears also comply with RFM requirements.</p> <p><b>Response – New text added to this section to cover pot and trawl gear regulations.</b></p> <p>A general remark concerning supporting clause 8.8: The clause under consideration speaks to an active process for measuring “performance” and encouraging development of selective, environmentally safe gear, technologies and techniques. The summary evidence does not indicate how managers monitor performance nor encourage development of more selective or environmentally safe gear and techniques.</p> <p><b>Response – Text added at end of Section to indicate gear performance is monitored in a number of ways, with some examples.</b></p> <p>Regarding the evidence in supporting clause 8.8, the team considers trawl gear but not pot or longline pot gears.</p> <p><b>Response – Specific text on pots added.</b></p> <p>In the evidence for supporting clause 8.8, there is reference to a trawl sweep gear modification required by NMFS in “certain trawl flatfish fisheries” but it is unclear if/how this applies to the sablefish fishery.</p> <p><b>Response – Text modified to indicate certain trawl fisheries that take sablefish as by-catch.</b></p> <p>In the evidence for supporting clause 8.8, the team cites a NMFS National Bycatch Reduction Strategy which is intended to guide and coordinate efforts to reduce bycatch and bycatch mortality in the coming years. Although the focal areas are presented, there is no explanation to if/ how these efforts will be applied specifically to the Alaska sablefish fishery.</p> <p><b>Response – New text added to the end of this section to indicate how the elements of the Bycatch Reduction Strategy have been implemented in Alaskan fisheries.</b></p> <p>Regarding the evidence in supporting clause 8.9, the team considers only the ghost fishing effects of lost or abandoned longline gear. They do not consider lost pots. The team’s conclusion of conformity seems to stand at odds with the NOAA publication they cite: “The most common types of [derelict fishing gear] DFG to ghost fish are gillnets and crab pots/traps, with longlines and trawls less likely to do so.” A more full exploration of the subject of lost or derelict pots in the sablefish fishery seems highly relevant to justification of the fishery’s conformity with supporting clause 8.9</p> <p><b>Response – Text added to indicate effect of using mandatory biodegradable panel in sablefish pots is to reduce/eliminate ghost fishing in this gear.</b></p> <p>A general remark concerning supporting clause 8.11: The team notes that “<i>in 2015, the NPFMC recommended that the Secretary of Commerce approve regulations to allow the use of longline pot gear in the Gulf of Alaska (GOA) sablefish IFQ fishery, largely to counteract whale depredation in these fisheries, and this is progressing through the regulatory process. At present, pots are allowed in BSAI but not in GOA. A review on the effects of allowing GOA Sablefish longline pot gear will be conducted 3 years after implementation and NMFS is to include pot gear effort in their management report to NPFMC.</i>” This is a potentially important development in the sablefish fishery which should be highlighted in the introduction section. This new development also underscores the necessity of clearly specifying which gear types are within the unit of certification.</p> <p><b>Response – Agreed – add some text on pots to Section 3.3.</b></p>

<b>D.</b>	<b>Management Measures</b>
<p>Regarding the evidence in supporting clause 8.12, as noted previously there is some question about how the stock boundary is drawn. This could imply that greater international cooperation on research programs is needed for Pacific sablefish. But even if we were to assume the two population model of Kimura is appropriate, Eastern Pacific sablefish is still a transboundary stock (between USA and Canada, per clause 1.3 and 5.4). Thus USA and Canada should cooperate on research programs for fishing gear selectivity. But the passage given in 8.2 does not provide evidence to show that that such cooperation is actually taking place.</p> <p><b>Response.</b> Some examples of Canada-USA cooperation are listed, such as joint IPHC-sponsored work on hook selectivity in longline fisheries for sablefish and halibut. Also, acknowledgment of negligible catches in adjacent Russian waters in recent years.</p>	
<b>9.</b>	<b>Fishing operations shall be carried out by fishers with appropriate standards of competence in accordance with international standards and guidelines and regulations.</b>
<p><b>Peer Review Comments:</b></p>	

<b>E.</b>	<b>Implementation, Monitoring and Control</b>
<b>10.</b>	<p>An effective legal and administrative framework shall be established and compliance ensured through effective mechanisms for monitoring, surveillance, control and enforcement for all fishing activities within the jurisdiction.</p>
<p><b>Peer Review Comments:</b></p> <p>Regarding the evidence in supporting clause 10.1, the report indicates that All landings of halibut must be reported to NMFS via its mandatory “e-landings” reporting system. But halibut landings are irrelevant here. The question is whether or not landings of sablefish are subject to an e-landings reporting system.                  Response: Typo. Information is related to Sablefish.</p> <p>With respect to providing evidence of an effective mechanism for MCSE under 10.1, the report indicates that NOAA-OLE investigated 122 incidents in Fiscal Year 2015. A more informative measure of ‘effectiveness’ would be to present enforcement statistics that describe the scope of monitoring and surveillance (e.g. what percentage of fishing trips are inspected? what percentage of sablefish trips are inspected?).                  Information provided on the text: 0.1% of total trips&lt;</p> <p>Regarding the evidence in supporting clause 10.3, the report presents overview statistics on enforcement (last three paragraphs on p. 152) which are irrelevant to the question of international cooperation on MCSE. This information should be presented under 10.1</p> <p>General remark on 10.3.1 and 10.4: Although the evidence section of 10.3.1 carefully details how the USA attains compliance with the RFM requirement, it is unclear why this supporting clause would be applicable to a sablefish fishery that is not prosecuted in international waters. The requirement of supporting clause 10.3.1 seems to be applicable to fisheries managed by RFMOs or comparable sub-regional organizations. But the</p>	

<b>E.</b>	<b>Implementation, Monitoring and Control</b>
	<p>fishery in question takes place entirely and exclusively within domestic waters (USA or Canada). Note that clause 10.4 was deemed not applicable because “The fishery does not occur in the high seas.” It is unclear why the team would conclude that 10.3.1 is applicable but 10.4 is not.</p> <p><b>Response:</b> information from 10.3.1 was deleted as it is non applicable as this fishery does not participate on international waters</p>
<b>11.</b>	There shall be a framework for sanctions for violations and illegal activities of adequate severity to support compliance and discourage violations.
	<p><b>Peer Review Comments:</b> Regarding supporting clause 11.1, the report says that “IFQ/CDQ sablefish is only permitted to be harvested with hook and line gear.” Is this statement not at odds with a pot fishery for sablefish described elsewhere in the report?</p> <p><b>Response:</b> Pots and trawl Information was added</p>

<b>F.</b>	<b>Serious Impacts of the Fishery on the Ecosystem</b>
<b>12.</b>	Considerations of fishery interactions and effects on the ecosystem shall be based on best available science, local knowledge where it can be objectively verified and using a risk based management approach for determining most probable adverse impacts. Adverse impacts of the fishery on the ecosystem shall be appropriately assessed and effectively addressed.
	<p><b>Peer Review Comments:</b> Regarding supporting clause 12.2, the report indicates that the Essential Fish Habitat Environmental Impact Statement (EFH EIS) (NMFS, 2005) concluded that the benthic longline fishery has minimal or temporary impacts on sablefish habitat. The evidence section does not address adverse environmental impacts of other sablefish gears such as pot or trawl.</p> <p><b>Response:</b> Information on impacts of pot and trawl was included</p> <p>Re 12.2, the report says that the effects of lost/abandoned gear have been studied. The authors cite a NMFS report on a working group reviewing ghost fishing, the group determined that longline gear garnered a “Low Priority Recommendations” when compared to pot and net gears. However, as pot and net gears are now included in this certification re-assessment (presumably?), it is unclear how the team could use such information to give a ‘high’ evidence rating with respect to the fishery assessing and correcting adverse environmental impacts.</p> <p><b>Response:</b> Additional information provided addressing the impacts of traps and trawl fisheries</p> <p>Regarding supporting clause 12.3, the evidence presented for longline (second paragraph in evidence section) should be followed by two new paragraphs which explicitly consider pot and trawl gears with respect to the most probable adverse impacts of the fishery on the ecosystem/environment. Note: Sablefish pots are known to take a considerable bycatch of halibut – a PSC species in the sablefish fishery.</p> <p><b>Response:</b> Additional information provided addressing the impacts of traps and trawl fisheries</p> <p>Re 12.3 observers: The evidence section indicates that with the implementation of the restructured observer coverage in a part of the halibut fleet, bycatch data collection will improve and allow management to make better informed decisions, especially for species like sharks and skates that generally tend to have low</p>

F.	Serious Impacts of the Fishery on the Ecosystem
	<p>reproductive rates. It is not clear that observer coverage of the halibut fleet is relevant to assessing bycatch in the directed sablefish fishery. Further, the report does not indicate current levels of observer coverage for the sablefish fishery. These figures should be reported. Note that the team does acknowledge under 12.4 that the sablefish directed fishery has a relatively low observer sampling effort.</p> <p><b>Response</b> Observer coverage levels for the longline fishery is 14%, Observer coverage for pot fishery is 14% and for trawl fisheries, it is 29%.</p> <p>Re 12.3 fishing gear impact on habitat: the report considers only longline and concludes there are no ‘serious’ concerns. It is not clear that the same argument is valid for pot and trawl gears</p> <p><b>Response:</b> Additional information inserted addressing the impacts of traps and trawl fisheries</p> <p>Re 12.3 ghostfishing: the report considers only longline and concludes that the gear garnered a low priority recommendation. It is not clear that the same argument is valid for pot and trawl gears.</p> <p><b>Response:</b> Additional information inserted addressing the impacts of traps and trawl fisheries</p> <p>Re 12.3 Seabirds: The report explains that the bycatch mitigation measures by the freezer longline fleet in Alaska have resulted in a 90% reduction in takes of seabirds. However data on seabird bycatch are not given in direct relation to the sablefish fishery.</p> <p><b>New information was added on data on seabird bycatch by the sablefish fishery.</b></p> <p>Regarding supporting clause 12.4, the report considers only longline (e.g. paragraph 4, p. 178). It is not clear that the same argument is valid for pot and trawl gears.</p> <p><b>Response:</b> Additional information inserted addressing the impacts of traps and trawl fisheries</p> <p>Re 12.4 non-target catches, the summary text accompanying Table 6 does not identify grenadiers as a significant component of catch. Grenadiers are taken in substantial quantities (approximately 8,000 t/yr for two species combined) in the sablefish longline fishery. The report should draw more attention to the magnitude of this impact on a non-target finfish species.</p> <p><b>Information the sablefish fishery impact on grenadiers was added as well as the current measures to reduce their bycatch</b></p> <p>Regarding supporting clause 12.5, the report gives a general overview of measures to minimize waste and discards of non-target species (both fish and non-fish species). However the report does not adequately consider issues of discarding and waste as they relate specifically to the sablefish fishery. Notably, there is no explicit consideration of catch and discarding of grenadiers – a non-target species discarded in quantities which far exceed the catch of any other single species aside from sablefish. The evidence given in this respect does not demonstrate how the fishery complies with 12.5 and it even suggests a general failing of the 5-point strategy as described therein.</p> <p><b>Response</b> A paragraph was written describing the stock status of grenadier complex :  <b>Excerpt from Rodgeveller et al 2014</b>  <b>For 2015, the maximum allowable ABC for the BSAI is 75,274 t and for the GOA is 30,691 t. This ABC</b></p>

**F. Serious Impacts of the Fishery on the Ecosystem**

Is a 12% increase for the BSAI and a 12% decrease for the GOA. The corresponding reference values for grenadier are summarized in the following tables, with the recommended ABC and OFL values in bold. Overfishing is not occurring in either the BSAI or GOA

Gulf of Alaska Grenadiers

Quantity	As estimated or specified last year for <sup>a</sup> :		As estimated or recommended this year for:	
	2014	2015	2015	2016
M (natural mortality)	0.078	0.078	0.078	0.078
Specified/recommended Tier	5	5	5	5
Biomass (t)	597,884	597,884	524,624	524,624
$F_{OFL} (F=M)$	0.078	0.078	0.078	0.078
$maxF_{ABC}$ (maximum allowable = $0.75x F_{OFL}$ )	0.0585	0.0585	0.0585	0.0585
$F_{ABC}$	0.0585	0.0585	0.0585	0.0585
OFL (t)	<b>46,635</b>	46,635	<b>40,921</b>	40,921
maxABC (t)	34,976	34,976	<b>30,691</b>	30,691
ABC (t)	<b>34,976</b>	34,976	<b>30,691</b>	30,691
Status	As determined last year for:		As determined this year for:	
	2012	2013	2013	2014
Overfishing	No	n/a	No	n/a

<sup>a</sup>The values for biomass, OFL, and ABC in these two columns are based on Rodgveller and Hulson 2013. They are an average of the last three trawl surveys that sampled down to 1,000 m. The current values (for 2015 and 2016) are from the random effects model fit to survey biomass by region and depth strata. These are unofficial ABC and OFL values since grenadier are an Ecosystem Component, which do not have ABCs or OFLs.

Bering Sea and Aleutian Islands Grenadiers

Quantity	As estimated or specified last year for <sup>a</sup> :		As estimated or recommended this year for:	
	2014	2015	2015	2016
M (natural mortality)	0.078	0.078	0.078	0.078
Specified/recommended Tier	5	5	5	5
Biomass (t)	1,152,284	1,152,284	1,286,734	1,286,734
$F_{OFL} (F=M)$	0.078	0.078	0.078	0.078
$maxF_{ABC}$ (maximum allowable = $0.75x F_{OFL}$ )	0.0585	0.0585	0.0585	0.0585
$F_{ABC}$	0.0585	0.0585	0.0585	0.0585
OFL (t)	<b>89,878</b>	89,878	<b>100,365</b>	100,365
maxABC (t)	67,409	67,409	<b>75,274</b>	75,274
ABC (t)	<b>67,409</b>	67,409	<b>75,274</b>	75,274
Status	As determined last year for:		As determined this year for:	
	2012	2013	2013	2014
Overfishing	No	n/a	No	n/a

<sup>a</sup>The values for biomass, OFL, and ABC in these two columns are based on Rodgveller and Hulson 2013. These are unofficial ABC and OFL values since grenadier are an Ecosystem Component, which do not have ABCs or OFLs.

Re 12.5, the report considers only longline (e.g. paragraph 2, p. 186) with respect to impacts on non-target species and impacts on associated, dependent or endangered species. It is unlikely that the same argument is valid for pot and trawl gears.

**Response: Additional information inserted addressing the impacts of traps and trawl fisheries**

Re 12.5, the report indicates that “Management actions are in place in respect to increasing knowledge on the bycatch dynamics of the directed halibut longline fishery (i.e. methods for the estimation of non-target species catch in the unobserved halibut IFQ fleet and the restructuring the observer program for inclusion of the halibut fleet).” Management of the halibut fishery is not relevant to this section.

Response: Typo changed to sablefish

Regarding supporting clause 12.5.1, it is not clear why there is a need to refer to the salmon fishery (see p. 189) to illustrate how NMFS monitors fishery interactions with marine mammals and endangered species. The report should focus on summarizing documented interactions of the sablefish fishery with marine mammals (killer whales, sperm whales) and TEP seabirds (short-tailed albatross).

**Response: Typo changed to sablefish**



F.	Serious Impacts of the Fishery on the Ecosystem
	<p>General remark regarding supporting clause 12.9: Overall the evidence section is well written and comprehensive. But it is not clear how this section relates to the sablefish fishery. There is no specific reference to sablefish EFH. There is no specific reference to sensitive habitats that may be impacted by sablefish directed fisheries using longline, pot and trawl.</p> <p>Information of EFH by stage and by region was added for sablefish. Information on sensitive habitats that may be impacted by sablefish directed fisheries using longline, pot and trawl have been addressed.</p> <p>Re 12.9: it is unclear why the report would focus on major efforts to identify EFH for salmon. Emphasis should be on sablefish.</p> <p>Response: Wrong species insertion arising from early template formatting error and is now corrected. Sablefish inserted.</p> <p>Regarding supporting clause 12.11, the summary evidence section suggests that the observer program was heavily restructured in 2013 but: 1) there is no description of what those changes were nor any evidence of how the changes led to improved observer coverage; and 2) the passage cites the ‘halibut fleet’ - not sablefish - as evidence of compliance.</p> <p>Response: Wrong species insertion arising from early template formatting error and is now corrected. Sablefish inserted</p> <p>Re 12.11: Please provide a citation for the statement “There is no overfished species and overfishing is not occurring in Alaskan waters.”</p> <p>Link from the North Pacific Fishery management council added.</p> <p>General remark Re 12.11: This supporting clause requires that the fishery has ‘outcome indicators’ consistent with achieving management objectives for non-target stocks. The assessment report explains that “the evidence for successful implementation is manifest by.... the healthy stock status for most non-target species relative to reference points.” The report should indicate which species are/are not above reference points (e.g. species presented in Tables 5 &amp; 6). Please provide more detail on current stock status and reference points for grenadier and giant grenadier.</p> <p>Response A paragraph was written describing the stock status of grenadier complex : Excerpt from Rodgevell et al., 2014 For 2015, the maximum allowable ABC for the BSAI is 75,274 t and for the GOA is 30,691 t. This ABC is a 12% increase for the BSAI and a 12% decrease for the GOA. The corresponding reference values for grenadier are summarized in the following tables, with the recommended ABC and OFL values in bold. Overfishing is not occurring in either the BSAI or GOA.</p>

**F. Serious Impacts of the Fishery on the Ecosystem**

**Gulf of Alaska Grenadiers**

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$F_{ABC}$	0.0585	0.0585	0.0585	0.0585
OFL (t)	46,635	46,635	40,921	40,921
maxABC (t)	34,976	34,976	30,691	30,691
ABC (t)	34,976	34,976	30,691	30,691
Status	As determined last year for:		As determined this year for:	
	2012	2013	2013	2014
Overfishing	No	n/a	No	n/a

<sup>a</sup>The values for biomass, OFL, and ABC in these two columns are based on Rodgvoller and Hulson 2013. They are an average of the last three trawl surveys that sampled down to 1,000 m. The current values (for 2015 and 2016) are from the random effects model fit to survey biomass by region and depth strata. These are unofficial ABC and OFL values since grenadier are an Ecosystem Component, which do not have ABCs or OFLs.

**Bering Sea and Aleutian Islands Grenadiers**

Quantity	As estimated or specified last year for <sup>a</sup> :		As estimated or recommended this year for:	
	2014	2015	2015	2016
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Specified/recommended Tier	5	5	5	5
Biomass (t)	1,152,284	1,152,284	1,286,734	1,286,734
$F_{OFL}$ (F=M)	0.078	0.078	0.078	0.078
$maxF_{ABC}$ (maximum allowable = 0.75x $F_{OFL}$ )	0.0585	0.0585	0.0585	0.0585
$F_{ABC}$	0.0585	0.0585	0.0585	0.0585
OFL (t)	89,878	89,878	100,365	100,365
maxABC (t)	67,409	67,409	75,274	75,274
ABC (t)	67,409	67,409	75,274	75,274
Status	As determined last year for:		As determined this year for:	
	2012	2013	2013	2014
Overfishing	No	n/a	No	n/a

<sup>a</sup>The values for biomass, OFL, and ABC in these two columns are based on Rodgvoller and Hulson 2013. These are unofficial ABC and OFL values since grenadier are an Ecosystem Component, which do not have ABCs or OFLs.

Re 12.11: The evidence section indicates that most non-target species have reference points. But it is unclear whether non-FMP species that are taken as non-target or bycatch in the sablefish fishery have reference points.

**Response: A paragraph was written to clarify what species non-FMP species has reference points**

General remark regarding supporting clause 12.12: Although the evidence section is well written and comprehensive, it is not clear how most of this section relates to the sablefish fishery. For example, the report discusses marine mammals at some length but it does not identify any 'outcome indicators' for the evaluating interactions of the sablefish fishery with marine mammals. Previous sections have discussed interactions of the longline fishery with sperm whales and killer whales but it is unclear whether or not the text about Stellar

<b>F.</b>	<b>Serious Impacts of the Fishery on the Ecosystem</b>
<p>sea lions and arctic ring seals (p.200) is of direct relevance to the sablefish fishery. If so, what are the outcome indicators?                  Response: <b>Interactions of marine mammals with fisheries may occur through competition, disturbance, and direct and incidental mortality. Because fish are prey for sperm whales or killer whales, fishery regulations have focused on reducing potential effects of competition, and minimizing localized depletion of their prey. Stellar sea lions and arctic ring seals interactions are very few to none. Paragraph on page 200 was modified accordingly.</b></p> <p>Re 12.12: it is unclear why the report would present evidence which focuses on how the salmon fishery interacts with Endangered Species. Emphasis should be on sablefish.                  Response: <b>: Wrong species insertion arising from early template formatting error and is now corrected. Sablefish inserted</b></p> <p>General remark regarding supporting clause 12.13: The evidence section provides a generic and lengthy account (&gt; 1,300 words) of NPFMC guidelines for management of EFH and groundfish species. However the section does not provide a description of the ‘outcome indicators’ which the Council uses to assess fishery impacts to, for example, habitats that are highly vulnerable to damage by the fishing gear of the unit of certification.                  Response: <b>All of these measures on avoiding, minimizing or mitigating the impacts of longline, pot and trawl are general for all groundfish species including sablefish.</b></p> <p>Re 12.13: Unclear how the lengthy description of closures/protected areas fulfils the RFM requirement to have an ‘outcome indicator’ for avoiding, minimizing or mitigating the impacts of longline, pot and trawl gears used in the directed sablefish fishery?                  Response: <b>All of these measures on avoiding, minimizing or mitigating the impacts of longline, pot and trawl are general for all groundfish species including sablefish.</b></p>	
<b>13.</b>	Where fisheries enhancement is utilized, environmental assessment and monitoring shall consider genetic diversity and ecosystem integrity.
<p><b>Peer Review Comments:</b>                  NA</p>	

## 9. Non-Conformances and Corrective Actions

Non-conformances are categorized as minor, major and critical non-conformances. Where the Assessment Team concludes that the available evidence does not meet the 'high' confidence rating for a specific clause of the Conformance Criteria, and on further clarification with fishery management organizations, the outcome remains unchanged; a non-conformance may be raised against that particular clause.

### **Low Confidence Rating (Critical Non-Conformance level)**

Information/evidence is completely absent or contradictory to demonstrating compliance of an element of a fishery to the given requirements of a supporting clause. In these cases, a low confidence rating, equivalent to a critical non-conformance is assigned. Alternatively, any non-conformance assigned to any Section A to F, above the designated maximum permitted of 1 major non-conformance or 3 minor non-conformances will also result in the assignment of a critical non-conformance (at Section level). A critical non-conformance will essentially stop the assessment (not allowing for certification) unless the applicant is able to provide information/evidence that demonstrates a better state of the fishery than previously assessed. The Validation Report activities are designed to determine if critical non-conformances within the Applicant Management System are likely before proceeding with the assessment. Notwithstanding this, the option of assigning critical non-conformances remains available to the Assessment Team if there is merit for this decision to be taken.

### **Medium Confidence Rating (at Major Non-Conformance level)**

Information/evidence is limited that demonstrates compliance of an element of the fishery to the given requirements of a supporting clause. In these cases a major improvement is needed to achieve high conformance and for a medium confidence rating at this level, a "major non-conformance" is assigned.

### **Medium Confidence Rating (at Minor Non-Conformance level)**

Information/evidence is broadly available that demonstrates conformity to a clause although there are some gaps in information/performance that if available would clarify aspects of conformity and allow the Assessment Team to assign a higher level of confidence. In these cases a minor improvement is needed to achieve high conformance and for a medium confidence rating at this level, a "minor non-conformance" is assigned.

### **High Level of Confidence**

Where the Assessment Team agrees that sufficient information/evidence is available to demonstrate conformance/performance to a given supporting clause, a high level of confidence is assigned. Sufficient evidence is that which allows, through expert opinion of the collective team, substantiation that a given element of a fishery, complies fully with the Alaska Responsible Fisheries Management Conformance Criteria.

***No non conformances were assigned for this fishery.***

## **10. Recommendation and Determination**

The Assessment Team recommends that the management system of the applicant fishery, Alaska Sablefish Fishery, under federal (NMFS/NPFMC) and state (ADFG/BOF) management, fished by Longline gear, pots and trawl gear within Alaska's 200 nm EEZ, remains certified against the Alaska Responsible Fisheries Management Certification Program.

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## 12. Appendices

### 12.1. Appendix 1 – Assessment Team

Based on the technical expertise required to carry out the above fishery assessment, Global Trust Certification Ltd., is pleased to confirm the Full Assessment team members for the fishery as follows.

#### Dr. Ivan Mateo (Lead Assessor)

Dr. Ivan Mateo has over 20 years' experience working with natural resources population dynamic modeling. His specialization is in fish and crustacean population dynamics, stock assessment, evaluation of management strategies for exploited populations, bioenergetics, ecosystem-based assessment, and ecological statistical analysis. Dr. Mateo received a Ph.D. in Environmental Sciences with Fisheries specialization from the University of Rhode Island. He has studied population dynamics of economically important species as well as candidate species for endangered species listing from many different regions of the world such as the Caribbean, the Northeast US Coast, Gulf of California and Alaska. He has done research with NMFS Northeast Fisheries Science Center Ecosystem Based Fishery Management on bio-energetic modeling for Atlantic cod. He also has been working as environmental consultant in the Caribbean doing field work and looking at the effects of industrialization on essential fish habitats and for the Environmental Defense Fund developing population dynamics models for data poor stocks in the Gulf of California. Recently Dr. Mateo worked as National Research Council postdoc research associate at the NOAA National Marine Fisheries Services Ted Stevens Marine Research Institute on population dynamic modeling of Alaska sablefish.

#### William (Bill) Brodie (Assessor)

Bill Brodie is an independent fisheries consultant with previously, a 36-year career with Science Branch of Fisheries and Oceans Canada (DFO, Newfoundland and Labrador Region). He has a BSc in Biology from Memorial University of Newfoundland and Labrador. For the last twelve years of service he worked as Senior Science Coordinator/Advisor on Northwest Atlantic Fisheries Organization (NAFO) issues, serving as chair of the Scientific Council of NAFO and chairing 3 of its standing committees. As a stock assessment biologist, he led assessments and surveys for several flatfish species and stocks, including American plaice, Greenland halibut, yellowtail and witch flounders. These include the largest stocks of flatfish in the NW Atlantic. He also participated in assessments of flatfish, gadoid, and shrimp stocks in the NE Atlantic and North Sea. Bill has participated in over 30 scientific research vessel surveys on various Canadian and international ships, and he has over 200 publications in the scientific and technical literature, primarily on flatfish stock assessment. He has been involved with fishery managers and the fishing industry on a variety of issues, including identification of ecologically sensitive areas, and developing rebuilding plans for groundfish under a Precautionary Approach. Recently, Bill has served as an assessor on Alaska Responsible Fisheries Management certification and surveillance audits for Alaskan stocks including Pacific cod, halibut, sablefish, pollock, and flatfish.

#### Sam Dignan, (Assessor)

Sam Dignan is a fisheries scientist, working as a full time assessor with Global Trust. He has previously worked with the Department of Environment, Food and Agriculture (DEFA), Isle of Man and Bangor University Fisheries and Conservation Science Group (Wales). He has a BSc in Biological and Chemical Sciences with Zoology from University College Cork and an MSc in Marine Environmental Protection from Bangor University. He has experience conducting stock assessments, from the survey design and implementation phases through to final analysis and report presentation; from 2013 to 2015 he was a member of the ICES working group stock assessment. He has been involved in providing scientific data to ensure fishery compliance with certification frameworks and has participated in surveillance audits from a client's perspective. Sam has extensive experience of interacting directly with fishers and their representative organization as well as members of scientific and

government institutions. He was previously an advisor to the Isle of Man Queen Scallop Management Board that manages the MSC certified Isle of Man queen scallop fishery. He has also worked on the spatial analysis of fishing activity, using Vessel Monitoring System (VMS) and logbook data, to spatially quantify fishing activity and fisheries-ecosystem interactions

## 12.2. Appendix 2

Based on the technical expertise required to carry out the above fishery assessment, Global Trust Certification Ltd. confirmed the external peer review team members for this sablefish fishery as follows.

Dr. Robert Leaf

Dr. Robert Leaf has ten years of experience working in the field of natural resource management of fin and shellfish. He specializes in the evaluation of management strategies of harvested species and the identification of environmental drivers that impact their population dynamics. Dr. Leaf received his Master's Degree in Marine Science at Moss Landing Marine Laboratories and his PhD in Fisheries and Wildlife Sciences from Virginia Polytechnic and State Institute. His last professional post was as a post-doc under Dr. Kevin Friedland at the Northeast Fishery Science Center's Narragansett Laboratory. There, he worked on understanding the impact of environmental conditions on fish stock productivity and recruitment. He has worked in the Gulf of Mexico for the last three years working on fish stock assessment of commercially and recreationally important species in that area. Dr. Leaf is a member of the Gulf of Mexico Fishery Management Council's Red Drum working group and NOAA's Marine Fisheries and Climate Taskforce. He currently supervises four masters level students working on various state and federally managed fish

Wes Toller (Independent Consultant in Sustainability)

As owner and operator of his own consulting business since 2010, Wes has worked closely with a number of leading certification schemes including the Marine Stewardship Council (MSC) and Aquaculture Stewardship Council (ASC) to develop and improve processes for auditing and accreditation of sustainability standards. He previously worked as a program manager with Accreditation Services International (ASI) where he helped establish the company's nascent MSC Program. Wes has an in-depth knowledge of ISO requirements and international best practices that pertain to eco-labelling. He has a detail-oriented work style and wide ranging interests. Although Wes enjoys all subject areas within the field of sustainability, his favorite theme is sustainable use of natural resources – especially fisheries management and marine science. He sees his move into the sustainability sector as a natural progression from his extensive background in fisheries management and habitat conservation. Wes received his doctorate in biological sciences from the University of Southern California. He currently resides in Seattle.