

PUBLIC REVIEW DRAFT

Environmental Assessment/ Regulatory Impact Review for Proposed Amendments to the Fishery Management Plans for Groundfish of the Bering Sea and Aleutian Islands Management Area and Groundfish of the Gulf of Alaska

Classification of Sculpin Species in the BSAI and GOA

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Abstract: This document analyzes alternatives pertaining to an action that could move all species of sculpins in the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area and the FMP for Groundfish of the Gulf of Alaska to the non-target ecosystem component category. Options are included for a range of the maximum retainable amount of sculpins per metric ton of target groundfish catch, should sculpin management be moved to the ecosystem component in both FMPs. There are no significant (beneficial or adverse) impacts on sculpin stocks or prohibited species catch. The preliminary preferred alternative could provide economic benefits to participants in the Bering Sea and Aleutian Islands groundfish fisheries by removing the sculpins harvest from accrual against the 2.0 million metric ton optimum yield cap, thereby allowing larger harvests of other, presently more valuable groundfish target species.

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List of Acronyms and Abbreviations

Acronym or Abbreviation	Meaning	Acronym or Abbreviation	Meaning
ABC	Acceptable Biological Catch	SAFE	Stock Assessment and Fishery Evaluation
ADF&G	Alaska Department of Fish and Game	SAR	Stock Assessment Report
AFA	American Fisheries Act	SBA	Small Business Act
AFSC	Alaska Fisheries Science Center	Secretary	Secretary of Commerce
AKFIN	Alaska Fisheries Information Network	TAC	Total Allowable Catch
BSAI	Bering Sea and Aleutian Islands	U.S.	United States
CAS	Catch Accounting System		
CEQ	Council on Environmental Quality		
CFR	Code of Federal Regulations		
Council	North Pacific Fishery Management Council		
CP	Catcher/Processor		
CV	Catcher Vessel		
E.O.	Executive Order		
EA	Environmental Assessment		
EC	Ecosystem Component		
EEZ	Exclusive Economic Zone		
EFH	Essential Fish Habitat		
EIS	Environmental Impact Statement		
ESA	Endangered Species Act		
FMA	Fisheries Monitoring and Analysis		
FMP	Fishery Management Plan		
FONSI	Finding of No Significant Impact		
FR	<i>Federal Register</i>		
GOA	Gulf of Alaska		
IRFA	Initial Regulatory Flexibility Analysis		
LOA	Length Overall		
mt	Metric Tons		
MSA	Magnuson-Stevens Fishery Conservation and Management Act		
MMPA	Marine Mammal Protection Act		
NEPA	National Environmental Policy Act		
NMFS	National Marine Fishery Service		
NOAA	National Oceanic and Atmospheric Administration		
NPFMC	North Pacific Fishery Management Council		
Observer Program	North Pacific Groundfish and Halibut Observer Program		
PSC	Prohibited Species Catch		
PPA	Preliminary Preferred Alternative		
PSEIS	Programmatic Supplemental Environmental Impact Statement		
RFA	Regulatory Flexibility Act		
RFFA	Reasonably Foreseeable Future Action		
RIR	Regulatory Impact Review		

Table of Contents

<i>Executive Summary</i>	5
1 <i>Introduction</i>	10
1.1 Purpose and Need	10
1.2 History of this Action	10
1.3 Description of Management Area	11
2 <i>Description of Alternatives</i>	13
2.1 Alternative 1: Status quo	13
2.2 Alternative 2: (Preliminary Preferred Alternative) Designate sculpins in both BSAI and GOA FMPs as non-target ecosystem component species	13
2.2.1 Meeting the requirements for Ecosystem Component	14
2.3 Comparison of Alternatives	18
2.3.1 Rationale for the Council’s Preliminary Preferred Alternative	19
3 <i>Environmental Assessment</i>	21
3.1 Methods	21
3.1.1 Documents incorporated by reference in this analysis	21
3.1.2 Resource components addressed in the analysis	23
3.1.3 Methods used for the impact analysis	24
3.1.4 Cumulative effects analysis	24
3.2 Sculpins	25
3.2.1 Sculpins status and role in the ecosystem	25
3.2.2 Harvest Specifications	29
3.2.3 Targeting, Catch, and Retention of Sculpins	32
3.2.4 Effects of the Alternatives on Sculpins	38
3.3 Prohibited Species	39
3.3.1 Effects of the Alternatives on Prohibited Species	39
4 <i>Regulatory Impact Review</i>	41
4.1 Statutory Authority	41
4.2 Purpose and Need for Action	42
4.3 Alternatives	42
4.4 Description of Fisheries	43
4.4.1 Harvests, Management, and Retained Catch	43
4.4.2 Value of Sculpins and Potential for Markets	44
4.4.3 Subsistence use of sculpins	45
4.5 Analysis of Impacts	46
4.5.1 Alternative 1: Status Quo	46
4.5.2 Alternative 2: (Preliminary Preferred Alternative) Designate sculpins in both BSAI and GOA FMPs as non-target ecosystem component species	47
4.5.3 Effects on Fishing Communities and Other Social Impacts	48
4.5.4 Affected Small Entities	48
4.6 Management and Enforcement Considerations	50
4.6.1 Alternative 1: Status Quo	50
4.6.2 Alternative 2: (Preliminary Preferred Alternative) Designate sculpins in both BSAI and GOA FMPs as non-target EC species	51
4.7 Summation of the Alternatives with Respect to Net Benefit to the Nation	52
5 <i>Magnuson-Stevens Act and FMP Considerations</i>	53
5.1 Magnuson-Stevens Act National Standards	53
5.2 Section 303(a)(9) Fisheries Impact Statement	55
5.3 Council’s Ecosystem Vision Statement	56
6 <i>Preparers and Persons Consulted</i>	57
7 <i>References</i>	57

List of Tables

Table 1-1	Summary of Management Measures in Alternatives 1 and 2	8
Table 2-1	National Standard factors a council should consider when deciding whether stocks require conservation and management, and their relevance to sculpins in the BSAI and GOA.....	17
Table 2-2	Summary of Management Measures in Alternatives 1 and 2	19
Table 3-1	Resources potentially affected by the proposed action and alternatives.	23
Table 3-2	Sculpin species observed in the waters off Alaska.	26
Table 3-3	Biomass (Random effects model estimate), total allowable catch (TAC), acceptable biological catch (ABC), Overfishing Limit (OFL), catch of the BSAI (top) and GOA (bottom), and catch/biomass ratio for the sculpin complex 2011 to 2019. *Catch estimated through February 2019.....	32
Table 3-4	Total catch in metric tons (mt) of all sculpins by target fishery in the Aleutian Islands, 2004 – 2018.....	34
Table 3-5	Total catch in metric tons (mt) of all sculpins by target fishery in the Eastern Bering Sea, 2004 – 2018.....	35
Table 3-6	Total catch in metric tons (mt) of all sculpins by target fishery in the Gulf of Alaska, 2004 – 2018.....	36
Table 3-7	Total catch in metric tons (mt) of sculpin complex, and proportion retained 2003 – 2018 in the BSAI and GOA groundfish fisheries and halibut fisheries starting in 2013.	37
Table 3-8	Retained Catch (mt) of sculpins as a proportion of the retained catch of groundfish by area and year.....	37
Table 3-9	Criteria used to determine significance of effects on groundfish stocks.....	38
Table 3-10	Criteria used to estimate the significance of impacts on incidental catch of Pacific halibut	40
Table 4-1	Retained Catch of Sculpins in the BSAI and GOA Combined by Gear and Sector in metric tons (mt) ...	44
Table 4-2	Ex vessel price per pound of catcher vessel (CV) caught sculpin for fish meal for both BSAI and GOA groundfish fisheries from 2006 through 2017.....	44
Table 4-3	Proportion of surveyed households in five Norton Sound region villages that harvested sculpins, reported in the ADF&G CSIS database (6/26/19) and in Kawerak (2013).	45
Table 4-4	Total pounds of sculpins harvested in five Norton Sound region villages, reported in the ADF&G CSIS database (6/26/19) and in Kawerak (2013).	46
Table 4-5	Comparison of sculpins management under Alternatives 1 and 2.....	51

List of Figures

Figure 1-1	NMFS regulatory and reporting areas in the GOA.....	12
Figure 1-2	NMFS BSAI sub-areas for management	12
Figure 3-1	Length frequencies (fork length, FL in mm) from the EBS slope survey data for the five most abundant sculpin species sampled through 2016. Year range determined by available data. (Spies et al. 2016).....	27
Figure 3-2	Length frequencies (fork length, FL in mm) for the three most abundant sculpin species in the AI, through 2016. Year range determined by available data. (Spies et al. 2016)	28
Figure 3-3	Length frequencies (fork length, FL in mm) from survey data for the 4 most abundant sculpin species in the GOA. Year range determined by available data. (Spies et al. 2017)	29
Figure 3-4	Random effects model estimates of biomass by region for the six most common shelf sculpins (top), slope (middle), and Aleutian Islands (bottom). Error bars represent 95% confidence intervals for survey estimates of biomass, and dotted lines represent 95% confidence intervals from the random effects model. (Spies et al. 2016)	30
Figure 3-5	Random effects model estimates of biomass for the five most common sculpins in the GOA complex. Error bars represent 95% confidence intervals for survey estimates of biomass, and dotted lines represent 95% confidence intervals from the random effect model. (Spies et al. 2017).....	31

Executive Summary

This document analyzes alternatives regarding appropriate management and classification of sculpin species (sculpins) in the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area (BSAI FMP) and the FMP for Groundfish of the Gulf of Alaska (GOA FMP). Options for classification and management of sculpins include a no-action alternative that would maintain sculpins in the target category and an action alternative that would move sculpins to the non-target ecosystem component (EC) category.

Purpose and Need

The North Pacific Fishery Management Council (Council) adopted the following purpose and need statement in April 2019:

Sculpins are benthic predators distributed throughout the Bering Sea Aleutian Islands (BSAI) and Gulf of Alaska (GOA) where they occupy all benthic habitats along continental shelf and slope areas. No conservation concerns exist for sculpins in the BSAI and GOA. Sculpins are currently managed as target species despite being caught only incidentally, and an annual overfishing limit (OFL), acceptable biological catch (ABC), and total allowable catch (TAC) for the sculpin complex is specified separately for the BSAI and GOA. Incidental catch of sculpins has been substantially below ABC and OFL. There are no directed fisheries for sculpins in either the BSAI or GOA, and sculpin bycatch is rarely retained. If the total TAC of sculpins is caught, retention is prohibited for the remainder of the year.

The purposes of this action are to identify the appropriate level of conservation and management required for sculpins and to accurately classify the sculpin complex in the BSAI and GOA FMPs based on the best available scientific information. The revised General Section of the National Standard guidelines includes options for classification and management of target and non-target species in FMPs. Options for classification and management of non-target stocks include identification of the species as “non-target ecosystem component species, not in need of conservation and management.” The best available data indicate that sculpins are not in need of conservation and management and could be reclassified as non-target ecosystem component species.

Alternatives

Two alternatives are considered in this analysis.

Alternative 1 would continue to manage sculpins in both the BSAI and GOA FMPs as a target species. OFL, ABC, and TAC will continue to be set for sculpins in both FMP areas. Stock assessments for sculpins would continue to be done annually. Directed fishing for sculpins is allowed, however sculpins are taken only as incidental catch in groundfish fisheries in both FMP areas.

Under Alternative 1, maximum retainable amounts (MRAs) for most sculpins as an incidental catch species are established at 20% of the basis species. This allows vessels fishing for groundfish to retain a quantity of sculpins equal to, but no more than, 20% of the round weight or round weight equivalent of most groundfish species open to directed fishing that are retained on board the vessel at any time during a fishing trip. The exceptions are for the basis species of BSAI arrowtooth flounder and Kamchatka flounder which have MRAs for sculpins of 3%. The MRA for all basis species in the GOA is 20%.

Alternative 2 [Preliminary Preferred Alternative] would move sculpins in both BSAI and GOA FMPs into the ecosystem component, which is a category of non-target species that are determined not in need of conservation and management. Harvest specifications (OFL, ABC, TAC) would no longer be required. Under Alternative 2, regulations would prohibit directed fishing for sculpins, continue to require

recordkeeping and reporting to monitor and report catch of sculpins annually, and establish a sculpins MRA when directed fishing for groundfish species at a level between 2 and 20%. MRA Options under this alternative include 2% (Option 1), 10% (Option 2), and 20% (Option 3: status quo). Higher MRAs would allow for some retention while providing flexibility to prosecute other groundfish fisheries. **(20% MRA is the preliminary preferred option).**

The options for lower MRAs are considered to allow retention of sculpins while discouraging targeting. Lower MRAs have been used for forage fish to effectively ban targeted fishing of prey species.

Environmental Assessment

Environmental impacts of this action are limited to direct impacts on sculpins and sculpin management with the possibility of indirect impacts on prohibited species catch (PSC). No other impacts are anticipated to other resource categories.

Sculpins

Sculpins are relatively small, demersal, teleost fishes with modified pectoral fins that allow them to grip the substrate, and they lack swim bladders. They consist of 4 diverse families off Alaska (Cottidae, Hemitripterae, Psychrolutidae, and Rhamphocottidae). Sculpins are found in both freshwater and marine habitats, and are distributed throughout the BSAI and GOA where they occupy all benthic habitats along continental shelf and slope areas.

Little is known about stock structure of sculpin species, and little research on stock structure has been done for sculpins in general. The low coefficient of variation for most of the biomass estimates of the more abundant species suggests that the EBS and GOA trawl surveys adequately estimate the biomass of the more abundant species (Spies et al. 2016, 2017). The effects of current fishing mortality on sculpins are considered insignificant under either FMP.

Alternative 2 would neither decrease nor likely substantially increase the incidental catch of sculpins in groundfish fisheries as sculpins do not appear to be targeted in any way, thus catch is likely truly incidental. It is likely that sculpins catch would be similar to status quo under Alternative 2.

The National Marine Fisheries Service (NMFS) in-season management already monitors sculpin catches in the Catch Accounting System (CAS) and there is no additional burden to continue to monitor and report sculpin catches. A periodic stock report is recommended with information provided on a schedule consistent with current stock assessments for sculpins in the BSAI and GOA FMPs. This would be consistent with current protocols for squid reports which are also in the EC in both FMPs.

Alternative 2, Options 1-3 provide options for MRAs including a 2% (Option 1), 10% (Option 2), and 20% MRA (Option 3: status quo). It is not clear that there is any conservation benefit to a constraining MRA when sculpins are not being targeted. Thus any constraining MRA would most likely increase required regulatory discards of sculpins rather than discourage targeting.

Prohibited Species

Sculpin catch in the BSAI and GOA is most common in the Pacific cod and flatfish trawl fisheries. These fisheries also encounter Pacific halibut, the only prohibited species that may be affected by the proposed action. However, because none of the groundfish fisheries have ever been constrained by sculpin catch, and it is unlikely that either alternative will change the spatial or temporal distribution of Pacific cod or flatfish fishing effort, it is also unlikely that either alternative will have any detectable impact on the Pacific halibut population in either the BSAI or GOA.

Regulatory Impact Review

Alternative 1, Status Quo

At present, the optimum yield (OY) cap established in the GOA FMP is substantially greater than the total of all GOA TACs. Therefore, managing sculpins as a target species group in the GOA does not require “funding” of sculpin TAC via reductions in TACs of any other groundfish species. In contrast, continuing to manage sculpins as a target species group in the BSAI FMP may have adverse effects on fishery total revenue. The BSAI Groundfish FMP specifies a total OY cap of 2 million mt, and the total of all BSAI groundfish TACs may not exceed this 2 million mt cap. Thus, continuing to manage BSAI sculpins as a target fishery means that sculpins incidental catch would continue to be “funded” from reduced TAC of other, presently more valuable, BSAI groundfish species. The likely potential economic impacts of the continuation of sculpins being managed as a target species in the BSAI are not significant in comparison to the overall value of the BSAI groundfish fishery; however, the impacts may be significant to individual operators and/or target fishery sectors depending on how sculpin TAC is funded in the future.

Alternative 1 will continue to impose recordkeeping and reporting requirements on the groundfish fishing industry, as well as other fisheries management measures that apply to all groundfish fisheries depending on the gear type, area, and time of year that fishing occurs. Current MRAs for sculpins in the BSAI are 20% for all basis species, except for arrowtooth flounder (3%) and Kamchatka flounder (3%), and MRAs for all basis species in the GOA are 20%.

Alternative 2 (Preliminary Preferred Alternative) Move Sculpins to the Ecosystem Component

Under Alternative 2, which would include sculpins in the groundfish FMPs as EC species, OFLs, ABCs, and TACs, would not need to be established. However, current recordkeeping and reporting requirements and other management measures that apply to the groundfish fisheries would continue. Since past harvests of sculpins taken incidentally are below the ABCs calculated for sculpins, there would be no significant effects on the stock biomass or fishing mortality in either the BSAI or GOA. Analysts did not identify any negative social or economic effects associated with Alternative 2. Potential positive economic effects are discussed below. None of the alternatives or options proposed would negatively impact the safety of human life at sea.

Alternative 2 prevents targeting of sculpins and prevents a directed fishery from being developed as well. However, if significant interest in targeting sculpins developed in the future, the Council could re-evaluate the status of sculpins at that time. Alternative 2 allows for a continued small amount of sculpins to be retained for personal use, subject to MRAs. Sale of retained sculpins would be allowed, subject to MRAs, only if the retained catch is processed into fishmeal.

A benefit of Alternative 2 is that BSAI sculpins would not be ‘funded’ under the same 2 million mt OY cap as other, presently more valuable groundfish species. A reclassification of sculpins to a non-target category would have the effect of freeing up about 5,000 mt of TAC in the BSAI, which could be allocated to other, presently more valuable groundfish target fisheries. Potential increases in other BSAI TACs could increase the value of the BSAI groundfish fisheries overall and to individual fishermen and processors who participate in the increase harvests relative to the value of the fishery under Alternative 1 (status quo).

The options under Alternative 2 would establish a MRA for sculpin species as incidental catch in the BSAI and GOA using MRAs of 2%, 10%, or 20% in Tables 10 and 11 of 50 CFR 679 when directed fishing for groundfish species at a level to allow retention while providing flexibility to prosecute groundfish fisheries. The current MRA for sculpins in the BSAI and GOA is 20% for most basis species, although retention of sculpins has been well below that number in recent years. Nearly all retained

sculpins are processed as low value fish meal at \$0.02 per pound, and there is little incentive for fishermen to attempt to target sculpins when sculpins are closed to directed fishing (“top off”).

Options under Alternative 2 also include the establishment of an MRA at 2% or 10%. However, there appears to be no conservation issue that would necessitate reducing the MRA from the existing 20%. The amount of sculpins that are currently caught and retained is limited and the economic value of the retained sculpins is also low. Lower MRA percentages would likely have some negative impacts on individual vessels due to the need to sort and discard sculpins at sea to stay below a 2% MRA or 10% MRA. Since there appears to be no conservation issue that necessitates reducing the sculpins MRA from its existing 20% in the BSAI and GOA, and considering the limited economic value of sculpins, reducing the MRA to 2% or 10% would increase operating costs for vessels while not providing any perceivable conservation benefit.

Comparison of Alternatives for Decision Making

This table provides a summary of key decision points under Alternatives 1 and 2. A summary of associated management and enforcement issues follows.

Summary of Management Measures in Alternatives 1 and 2

Management Measure	Alt 1- No Action	Alt 2 - Ecosystem Component (Preliminary Preferred Alt)
Prohibit Directed Fishing	No	Yes Prohibit directed fishing in regulations at 679.20(i)
Retention and Sale	Yes Retention and sale allowed.	Yes Retention and personal use allowed, subject to MRA limits. Sale allowed if processed into fishmeal.
Annual Harvest Specifications	Yes - Stock assessments continue - Sculpin TAC assessed as part of optimum yield	No - Periodic reports on biomass information from current surveys will be included in the SAFE (similar to squids) - Catch does not accrue to optimum yield cap
Incidental Catch Management	Yes MRA for sculpins as incidental catch species = 20% for most basis species	Yes MRA as incidental catch species = options for 20% (Preliminary Preferred Option), 10%, 2%
Recordkeeping and Reporting	Yes Require catch reporting	Yes Require catch reporting

Some management and enforcement issues are identified with management under Alternative 1, including:

- Monitoring catch at the individual trip level to ensure that the sculpins MRA is not exceeded;
- Monitoring cumulative catch to ensure that catch is not approaching the TAC;
- Determining if nonspecified reserves in the BSAI are available to be added to increase the initial total allowable catch (ITAC);
- Placing sculpins on prohibited species status when total TAC is exceeded or projected to be exceeded;
- Considering further directed fishing closures in the event harvest ever approaches the OFL; and
- Challenge for enforcement to determine appropriate penalty for sculpins MRA overages due to low price of sculpins.

Depending upon the selection of an MRA option under Alternative 2, many of these management and enforcement issues would be alleviated. However, NMFS's enforcement burden is likely to increase should the Council select any MRA lower than the status quo (20% for sculpin for most basis species).

Below is a summary of changes from the Initial Review draft to the Public Review draft of this analysis. These changes are meant to address the comments from the SSC.

- The analysts and the stock assessment author note in section 3.2.3 that they are not aware of any literature on sculpin discard mortality. In the absence of any data on discard mortality, 100% mortality of incidental catch of sculpins is assumed for the stock assessment.
- A new table (Table 3-8) was added to show the low percentage of retained sculpins compared to the total retained groundfish.
- New language was added in section 3.2.4.2 to explain that the preliminary preferred MRA option would have the effect of increasing sculpin MRAs for arrowtooth and Kamchatka flounder as basis species from 3% to 20%. As discussed in Section 2.1, MRAs for these two species increased from 0% to 3% in 2013 to decrease discards and allow some retention of these two previously undesirable basis species. Because sculpins are rarely retained, this MRA increase is not anticipated to have any noticeable effect and it would be consistent with MRAs for all other basis species.
- New language was added to section 3.2.4.1 to address the SSC's request to summarize available information on local sculpin population structure and the potential for species-specific fishery impacts.
- Additional information was added to section 2.2 to explain what would be included in the contents of sculpin stock reports, which would be provided every four years under the preliminary preferred alternative.
- Additional language was added to section 3.2.1 on sculpin size ranges.
- Section 4.4.3 was added to discuss subsistence use of sculpins.
- Additional language was added to the RIR to address the SSC's comments on economic, social, and community impact-related statements.

1 Introduction

This document analyzes alternatives that could move all species of sculpins (see Table 3-2 for list of species) in the BSAI FMP and the GOA FMP to the non-target EC category, in which case they would not be considered in need of conservation and management.

This document is an Environmental Assessment/Regulatory Impact Review (EA/RIR). An EA/RIR provides assessments of the environmental impacts of an action and its reasonable alternatives (the EA), and the economic benefits and costs of the action alternatives, as well as their distribution (the RIR). This EA/RIR addresses the statutory requirements of the Magnuson Stevens Fishery Conservation and Management Act (MSA), the National Environmental Policy Act (NEPA), and Presidential Executive Order 12866. An EA/RIR is a standard document produced by the Council and the NMFS Alaska Region to provide the analytical background for decision-making.

1.1 Purpose and Need

The Council adopted the following purpose and need statement in April 2019:

Sculpins are benthic predators distributed throughout the BSAI and GOA where they occupy all benthic habitats along continental shelf and slope areas. No conservation concerns exist for sculpins in the BSAI and GOA. Sculpins are currently managed as target species despite being caught only incidentally, and an annual OFL, ABC, and TAC for the sculpin complex is specified separately for the BSAI and GOA. Incidental catch of sculpins has been substantially below ABC, OFL. There are no directed fisheries for sculpins in either the BSAI or GOA, and sculpin bycatch is rarely retained. If the total TAC of sculpins is caught, retention is prohibited for the remainder of the year.

The purposes of this action are to identify the appropriate level of conservation and management required for sculpins and to accurately classify the sculpin complex in the BSAI and GOA groundfish FMPs based on the best available scientific information. The revised General Section of the National Standard guidelines includes options for classification and management of target and non-target species in FMPs. Options for classification and management of non-target stocks include identification of the species as “non-target ecosystem component species, not in need of conservation and management.” The best available data indicate that sculpins are not in need of conservation and management and could be reclassified as non-target ecosystem component species.

1.2 History of this Action

The MSA requires that each regional fishery management council develop annual catch limits (ACLs) and accountability measures (AMs) for each of its managed fisheries, such that each FMP under its jurisdiction has a mechanism for specifying ACLs at a level that overfishing does not occur in the fishery. The reauthorized MSA strengthened provisions to prevent and end overfishing and rebuild depleted fisheries. NMFS revised National Standard (NS) guidelines at 50 CFR 600, to integrate these new requirements intended to reduce overfishing with existing provisions related to overfishing, rebuilding overfished stocks, and achieving optimum yield. On January 16, 2009, NMFS issued final guidelines for NS (74 FR 3178). NMFS revised those 2009 final NS guidelines on October 18, 2016 (81 FR 71858). Information in this document regarding the NS guidelines reflects the 2016 revisions.

Amendments 87 to the GOA FMP and 96 to the BSAI FMP established the EC category and designated prohibited species (defined in Table 2b to Part 679, and includes salmon, steelhead trout, crab, halibut, and herring) and forage fish (as defined in Table 2c to Part 679 and § 679.20(i)) as EC species in both the BSAI and GOA FMPs. These amendments also moved all species in the “other species” category, which

included sculpins, to the “target species” category, removed the “other species” category from the FMPs, and establish harvest specifications, including TAC, for sculpins.

Target stocks in a FMP, where sculpins are now classified, are stocks or stock complexes that fishermen seek to catch for sale or personal use, including such fish that are discarded for economic or regulatory reasons as defined under MSA Section 3(9) and 3(38). Non-target stocks are fish caught incidentally during the pursuit of target stocks in a fishery. Non-target stocks may require conservation and management and, if so, must be included in a FMP and be identified at the stock or stock complex level. If non-target species are not in need of conservation and management, they may be identified in a FMP as EC species. EC species or stocks are stocks that are not targeted and a Regional Fishery Management Council or the Secretary of Commerce (Secretary) has determined do not require conservation and management, but desire to list in a FMP to achieve ecosystem management objectives.

In December 2018, the Council directed staff to produce a discussion paper evaluating the appropriate level of conservation and management required for sculpins in the BSAI and the GOA consistent with the MSA and NS guidelines. The Council’s motion directed staff to assess whether the best available scientific information indicates that sculpins could be managed as non-target species, specifically whether sculpins could be identified as “non-target ecosystem component species not in need of conservation and management.”

In April 2019, the Council reviewed the discussion paper evaluating the appropriate level of conservation and management required for sculpins in the BSAI and GOA consistent with the MSA and NS guidelines. After review and public testimony, the Council initiated an analysis to designate sculpins in the BSAI and GOA as non-target EC species. The Council approved a motion adopting a purpose and need statement and identifying alternatives to consider the appropriate conservation and management status for sculpins in the BSAI and GOA. Alternatives include the Status Quo Alternative 1, and Alternative 2 (Action Alternative), to designate sculpins in the BSAI and GOA as non-target ecosystem component species. Alternative 2, identified as the preliminary preferred alternative by the Council in for the Initial Review draft of this analysis, would require regulations to prohibit directed fishing for sculpins, establish MRAs for sculpins (Options 2%, 10%, 20%), and require recordkeeping and reporting to monitor catch and discards of sculpin species. The motion also encouraged the Alaska Fisheries Science Center (AFSC) to continue to explore methods to estimate sculpin abundance and assess the sculpin stocks.

1.3 Description of Management Area

This action pertains to all management areas in the GOA (Figure 1-1) and BSAI (Figure 1-2). In both FMP areas, sculpins are managed area-wide (i.e. Gulf-wide specifications and BSAI-wide specifications) rather than by specific regulatory areas or sub-areas.

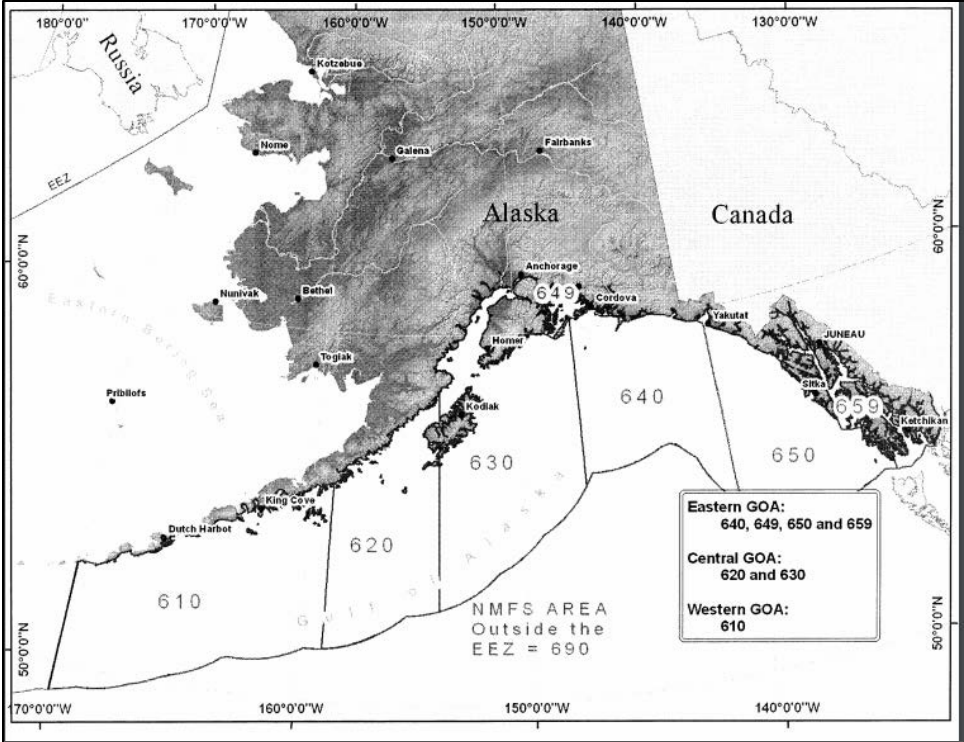


Figure 1-1 NMFS regulatory and reporting areas in the GOA¹

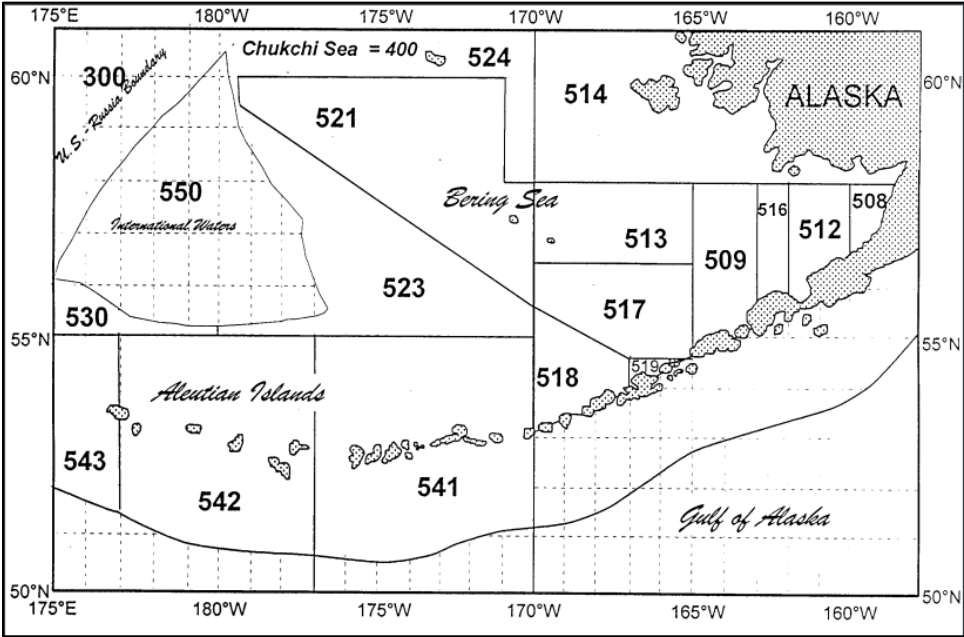


Figure 1-2 NMFS BSAI sub-areas for management²

¹ Figure 3 to 50 CFR 679
² Figure 1 to 50 CFR 679

2 Description of Alternatives

NEPA requires that an EA analyze a reasonable range of alternatives consistent with the purpose and need for the proposed action. The alternatives in this chapter were designed to accomplish the stated purpose and need for the action. All of the alternatives were designed to provide for appropriate management and monitoring for sculpins in the BSAI and GOA without unnecessarily constraining groundfish fisheries.

The Council adopted the following alternatives for analysis in April 2019.

2.1 Alternative 1: Status quo

Under Alternative 1, sculpins would continue to be managed as target species in both the BSAI and GOA groundfish FMPs. OFL, ABC, and TAC would continue to be set for sculpins in both areas. Full stock assessments for sculpins would continue to be done every four years. While sculpins are classified as a target species, there is no directed fishing for sculpins and they are only taken as incidental catch in groundfish fisheries in both FMP areas. Vessel operators are required to report the catch and retention of sculpins on logbooks, landing reports, and production reports.

Under Alternative 1, current MRAs³ for sculpins would be maintained in the BSAI at 20% for most basis species, except for arrowtooth flounder (3%) and Kamchatka flounder (3%), and 20% for all basis species in the GOA (50 CFR Part 679 Table 10, GOA Retainable Percentages, and Table 11, BSAI Retainable Percentages). In 2013 with the increased directed fishing for arrowtooth flounder and Kamchatka flounder, the Council recommended and NMFS increased the MRAs for groundfish species closed to directed fishing using arrowtooth flounder and Kamchatka flounder as the basis species. For the “other species” group, which includes sculpins, the MRA increased from 0% to 3% to decrease discards and allow some retention (78 FR 29248, June 19, 2013). MRAs allow vessels fishing for groundfish to retain a quantity of sculpins equal to, but no more than, a specified percent of the round weight or round weight equivalent of groundfish species open to directed fishing and retained on board the vessel at any time during a fishing trip. MRA percentages serve as a management tool to slow harvest rates and reduce the incentive for targeting species closed to directed fishing.

2.2 Alternative 2: (Preliminary Preferred Alternative) Designate sculpins in both BSAI and GOA FMPs as non-target ecosystem component species

Alternative 2 would move sculpins to the EC in both the BSAI and GOA groundfish FMPs. Harvest specifications (OFL, ABC, TAC) would no longer be required. Directed fishing for sculpin species would be prohibited. Recordkeeping and reporting would be required under this alternative to monitor catch of sculpins annually. The AFSC would not be directing resources to continue to explore methods to estimate biomass and assess the sculpin stocks. The AFSC would however, continue to collect biomass information from the current surveys and report on the catch and survey biomass information in stand-alone reports that are included in the Stock Assessment and Fishery Evaluation (SAFE) (similar to squids⁴). These sculpin reports would likely be completed every four years according to the current schedule for assessing sculpins, and would include data on incidental catch of sculpins.

This alternative would also establish an MRA for sculpins. MRAs for sculpins caught incidentally by other BSAI and GOA groundfish fisheries would be derived pursuant to Tables 10 and 11 of 50 CFR 679. The MRA for the sculpins complex would minimize bycatch to the extent practicable consistent with NS

³ Sculpins are managed as “other species” for MRAs in both the BSAI and GOA.

⁴ Status report for squid species in the BSAI can be found at:
<https://www.afsc.noaa.gov/REFM/Docs/2018/BSAI/BSAIsquid.pdf>.

9 and allow retention of sculpins while providing flexibility to prosecute groundfish fisheries. Three options for MRAs are considered:

- Option 1 MRA = 2%
- Option 2 MRA = 10%
- Option 3 MRA = 20% [**Preliminary Preferred Alternative**]

Option 3 is the status quo for the most part for sculpins caught incidentally when fishing for groundfish while lower MRAs under Options 1 and 2 are considered to discourage any targeted fishing for sculpins.

2.2.1 Meeting the requirements for Ecosystem Component

Section 302(h)(1) of the MSA requires a Council to prepare an FMP for each fishery under its authority that requires (or in other words, is in need of) conservation and management. Section 3(5) of the MSA defines “conservation and management” as “all of the rules, regulations, conditions, methods, and other measures:

- (A) Which are required to rebuild, restore, or maintain, and which are useful in rebuilding, restoring, or maintaining, any fishery resource and the marine environment; and
- (B) Which are designed to assure that –
 - i. a supply of food and other products may be taken, and that recreational benefits may be obtained, on a continuing basis;
 - ii. irreversible or long-term adverse effects on fishery resources and the marine environment are avoided; and
 - iii. there will be a multiplicity of options available with respect to future uses of these resources.”

NMFS has recently published guidelines to aid the fishery management councils as they consider whether a stock requires conservation and management, and if so, how the councils should meet the requirements of the NS in section 301(a) of the MSA. Revised NS guidelines describe the fact that FMPs typically include certain target species, and certain non-target species, that the Councils or the Secretary believed require conservation and management. The NS general guidelines in 50 CFR §600.305(d) define how stocks should be classified in an FMP:

(11) *Target stocks* are stocks or stock complexes that fishers seek to catch for sale or personal use, including such fish that are discarded for economic or regulatory reasons as defined under Magnuson-Stevens Act section 3(9) and 3(38).

(12) *Non-target species* and *non-target stocks* are fish caught incidentally during the pursuit of target stocks in a fishery. Non-target stocks may require conservation and management and, if so, must be included in a FMP and be identified at the stock or stock complex level. If non-target species are not in need of conservation and management, they may be identified in an FMP as ecosystem component species.

(13) *Ecosystem Component Species* (see §§ 600.305(c)(5) and 600.310(d)(1)) are stocks that a Council or the Secretary has determined do not require conservation and management, but desire to list in an FMP in order to achieve ecosystem management objectives.

While sculpins are currently classified as a target species in both the BSAI FMP and the GOA FMP, there is no indication that anyone has conducted directed fishing for sculpins since they were included in these FMPs. Since 2013, the retention rate has been below 5% in both the BSAI and GOA (Table 3-7). Therefore, there is no indication that sculpins have been or are actively “targeted” in the BSAI or GOA. A decision to reclassify sculpins as EC species as a special sub-set of non-target stocks would be based upon a determination that conservation and management measures are not required for these stocks. The EC

designation is considered a discretionary provision of FMPs. Section 303(b)(12) of the MSA states that Councils may “include measures in [FMPs] to conserve target and non-target species and habitats, considering the variety of ecological factors affecting fishery populations.” In order for a stock to be considered an EC species, the Council must determine that conservation and management measures are not required but that retaining these stocks within the FMP itself will assist in achieving ecosystem management objectives. The NS guidelines under section 600.305 (c) provide direction for determining which stocks will require conservation and management as well as providing direction to councils for how to consider these factors in making this determination.

(1) Not every fishery requires Federal management. Any stocks that are predominately caught in Federal waters and are overfished or subject to overfishing, or likely to become overfished or subject to overfishing, are considered to require conservation and management. Beyond such stocks, Councils may determine that additional stocks require “conservation and management.” (See Magnuson-Stevens Act definition at 16 U.S.C. 1802(5)). Based on this definition of conservation and management, and other relevant provisions of the Magnuson-Stevens Act, a Council should consider the following non-exhaustive list of factors when deciding whether additional stocks require conservation and management:

- (i) The stock is an important component of the marine environment.*
- (ii) The stock is caught by the fishery.*
- (iii) Whether an FMP can improve or maintain the condition of the stock.*
- (iv) The stock is a target of a fishery.*
- (v) The stock is important to commercial, recreational, or subsistence users.*
- (vi) The fishery is important to the Nation or to the regional economy.*
- (vii) The need to resolve competing interests and conflicts among user groups and whether an FMP can further that resolution.*
- (viii) The economic condition of a fishery and whether an FMP can produce more efficient utilization.*
- (ix) The needs of a developing fishery, and whether an FMP can foster orderly growth.*
- (x) The extent to which the fishery is already adequately managed by states, by state/Federal programs, or by Federal regulations pursuant to other FMPs or international commissions, or by industry self-regulation, consistent with the requirements of the Magnuson-Stevens Act and other applicable law.*

(2) In evaluating factors in paragraphs (c)(1)(i) through (x) of this section, a Council should consider the specific circumstances of a fishery, based on the best scientific information available, to determine whether there are biological, economic, social and/or operational concerns that can and should be addressed by Federal management.

(3) When considering adding a stock to an FMP, no single factor is dispositive or required. One or more of the above factors, and any additional considerations that may be relevant to the particular stock, may provide the basis for determining that a stock requires conservation and management. Based on the factor in paragraph (c)(1)(iii) of this section, if the amount and/or type of catch that occurs in Federal waters is a significant contributing factor to the stock’s status, such information would weigh heavily in favor of adding a stock to an FMP. However, Councils should consider the factor in paragraph (c)(1)(x) of this section before deciding to include a stock in an FMP. In many circumstances, adequate management of a fishery by states, state/Federal programs, or

another Federal FMP would weigh heavily against a Federal FMP action. See, e.g., 16 U.S.C. 1851(a)(7) and 1856(a)(3).

(4) When considering removing a stock from, or continuing to include a stock in, an FMP, Councils should prepare a thorough analysis of factors in paragraphs (c)(1)(i) through (x) of this section, and any additional considerations that may be relevant to the particular stock. As mentioned in paragraph (c)(3) of this section, if the amount and/or type of catch that occurs in Federal waters is a significant contributing factor to the stock's status, such information would weigh heavily in favor of continuing to include a stock in an FMP. Councils should consider weighting the factors as follows. Factors in paragraphs (c)(1)(i) through (iii) of this section should be considered first, as they address maintaining a fishery resource and the marine environment. See 16 U.S.C. 1802(5)(A). These factors weigh in favor of continuing to include a stock in an FMP. Councils should next consider factors in paragraphs (c)(1)(iv) through (ix) of this section, which set forth key economic, social, and other reasons contained within the MSA for an FMP action. See 16 U.S.C. 1802(5)(B). Finally, a Council should consider the factor in paragraph (c)(1)(x) of this section before deciding to remove a stock from, or continue to include a stock in, an FMP. In many circumstances, adequate management of a fishery by states, state/Federal programs, or another Federal FMP would weigh in favor of removing a stock from an FMP. See e.g., 16 U.S.C. 1851(a)(7) and 1856(a)(3).

(5) Councils may choose to identify stocks within their FMPs as ecosystem component (EC) species (see §§ 600.305(d)(13) and 600.310(d)(1)) if a Council determines that the stocks do not require conservation and management based on the considerations and factors in paragraph (c)(1) of this section. EC species may be identified at the species or stock level, and may be grouped into complexes. Consistent with National Standard 9, MSA section 303(b)(12), and other applicable MSA sections, management measures can be adopted in order to, for example, collect data on the EC species, minimize bycatch or bycatch mortality of EC species, protect the associated role of EC species in the ecosystem, and/or to address other ecosystem issues.

(6) A stock or stock complex may be identified in more than one FMP. In this situation, the relevant Councils should choose which FMP will be the primary FMP in which reference points for the stock or stock complex will be established. In other FMPs, the stock or stock complex may be identified as "other managed stocks" and management measures that are consistent with the objectives of the primary FMP can be established.

(7) Councils should periodically review their FMPs and the best scientific information available and determine if the stocks are appropriately identified. As appropriate, stocks should be reclassified within an FMP, added to or removed from an existing FMP, or added to a new FMP, through an FMP amendment that documents the rationale for the decision.

Table 2-1 below lays out the NS non-exhaustive list of 10 factors a council should consider when deciding whether stocks require conservation and management, and includes some considerations for each factor's relevance to sculpins.

Table 2-1 National Standard factors a council should consider when deciding whether stocks require conservation and management, and their relevance to sculpins in the BSAI and GOA.

National Standard Factor	Relevance to sculpins in Alaska
i. The stock is an important component of the marine environment.	<ul style="list-style-type: none"> Sculpins are predators of the shelf and slope ecosystems in the BSAI and GOA (Section 3.2.1).
ii. The stock is caught by the fishery.	<ul style="list-style-type: none"> Sculpins are caught incidentally to other groundfish fisheries in the BSAI and GOA (Section 1.1).
iii. Whether a FMP can improve or maintain the condition of the stock	<ul style="list-style-type: none"> Sculpins are not experiencing overfishing and fishing related mortality is low in both the BSAI and GOA (Table 3-3). There is no directed fishing for sculpins in either the BSAI or GOA. In the absence of directed fishing, sculpins are very unlikely to become overfished in either the BSAI or GOA.
iv. The stock is a target of a fishery.	<ul style="list-style-type: none"> There is no directed fishing for sculpins in either the BSAI or GOA.
v. The stock is important to commercial, recreational, or subsistence users.	<ul style="list-style-type: none"> Sculpins are not considered important to commercial or recreational users in either the BSAI or GOA; however, there is some limited ongoing use of sculpins for fish meal. There is also some limited use of sculpins for subsistence by Alaska Natives in the Norton Sound region (Section 4.4.2 and 4.4.3).
vi. The fishery is important to the Nation or to the regional economy.	<ul style="list-style-type: none"> Sculpins have limited economic value relative to other BSAI and GOA groundfish, and are not considered important to the National or regional economy (Table 4-2).
vii. The need to resolve competing interests and conflicts among user groups, and whether a FMP can further that resolution.	<ul style="list-style-type: none"> There is no directed fishing for sculpins in either the BSAI or GOA, no allocations to user groups, and no competing interests or conflicts among user groups relative to sculpins.
viii. The economic condition of a fishery and whether a FMP can produce more efficient utilization.	<ul style="list-style-type: none"> Sculpins have limited economic value relative to other BSAI and GOA groundfish (Table 4-2). Retention of sculpins has varied, but is currently less than 5% in both the BSAI and GOA.
ix. The needs of a developing fishery, and whether a FMP can produce more efficient utilization.	<ul style="list-style-type: none"> There is currently no developing fishery for sculpins in either the BSAI or GOA. Existing FMPs could adequately manage any new fishery.
x. The extent to which the fishery is already adequately managed by states, by state/Federal programs, or by Federal regulations pursuant to other FMPs or international commissions, or by industry self-regulation, consistent with the requirements of the MSA and other applicable law.	<ul style="list-style-type: none"> Currently, there is no directed fishing for sculpins in either the BSAI or GOA in state or Federal waters.

The NS guidelines in paragraph (4), above, state that factors i – iii should be considered first when councils consider whether species are in need of conservation and management. Regarding factor i, sculpins occur throughout the BSAI and GOA, and undoubtedly have an important niche in the BSAI and GOA ecosystems. However, the same could be said for all species or species complexes in any marine ecosystem. Looking further, it does not appear that sculpins are a major prey item for Steller sea lions (Sinclair et al. 2013), northern fur seals (e.g., Call and Ream 2012), or other threatened or endangered marine mammals in either the BSAI or GOA. Sculpins do play a role as a predator of smaller fish, shrimp, and benthic amphipods; however, it does not appear that sculpins in the BSAI or GOA are uniquely important components of the marine ecosystem.

Regarding factor ii, sculpins are caught incidentally to other target species in several fisheries in the BSAI and GOA. Sculpins are not, however, a target species for any fishery in the BSAI or GOA. Regarding factor iii, there is no directed fishing for sculpins in either the BSAI or GOA, and fishing related mortality is low in both areas. Because there is no directed fishing and incidental fishing-related mortality is low, there is very little probability that sculpins will become overfished under current management structure. Sculpins are not in need of rebuilding, and are not targeted as a major food product in Alaska. There are no conservation concerns, and future uses of sculpins remain available. Therefore, maintaining sculpins as a target species in the BSAI and GOA FMPs is not likely to improve or maintain stock condition.

The NS guidelines next direct councils to consider factors iv – ix which set forth key economic, social, or other reasons which, if answered positively, would argue for maintaining a stock within a FMP. There is no directed fishing for sculpins because there is no existing market. However, should a market develop in either the BSAI or GOA, the Council could reconsider whether management in the fishery or as an EC species is appropriate. At present, there are no economic, social, or other reasons to maintain sculpins as target species in either the BSAI or GOA FMPs, as explained in Table 2-1, above.

Finally, the NS guidelines direct councils to consider factor x, whether the fishery is adequately managed by states, state/Federal programs, other FMPs, international commissions, or industry self-regulation. Currently, sculpins are adequately managed by the existing BSAI and GOA FMPs, but factors i-ix suggest that maintaining sculpins as a target species does not improve management of sculpins in either the BSAI or GOA.

Any decision by the Council as to whether conservation and management is needed for sculpins in the BSAI and GOA would need to be consistent with the NS of the MSA. Because there is no directed fishing, and there are few economic benefits to be gained by managing sculpins as a target stock, moving sculpins to EC species would likely be consistent with all NS. However, the Council should consider measures for the fishery to minimize incidental catch and mortality of EC species, consistent with NS 9, and to protect their role in the ecosystem. The Council has multiple tools to manage incidental catch, including maintaining a MRA to meet Council objectives. Current MRAs for sculpins⁵ in the BSAI are 20% for most basis species, except for arrowtooth flounder (3%) and Kamchatka flounder (3%), and 20% for all basis species in the GOA. The Council may choose whether to consider other MRA amounts for sculpins in the BSAI or GOA, including raising the percentages for arrowtooth and Kamchatka flounder, if they consider moving sculpins to EC status in either FMP.

2.3 Comparison of Alternatives

Table 2-2 provides a summary of the two alternatives and options considered in this action.

⁵ Sculpins are managed as “other species” for MRA amounts in both the BSAI and GOA.

Table 2-2 Summary of Management Measures in Alternatives 1 and 2

Management Measure	Alt 1- No Action	Alt 2 - Ecosystem Component (Preliminary Preferred Alt)
Prohibit Directed Fishing	No	Yes Prohibit directed fishing in regulations at 679.20(i)
Retention and Sale	Yes Retention and sale allowed.	Yes Retention and personal use allowed, subject to MRA limits. Sale allowed if processed into fishmeal.
Annual Harvest Specifications	Yes - Stock assessments continue - TAC assessed in optimum yield	No - Periodic reports on biomass information from current surveys will be included in the SAFE (similar to squids) - Catch does not accrue to optimum yield cap
Incidental Catch Management	Yes MRA for sculpins as incidental catch species = 20% for most basis species	Yes MRA as incidental catch species = options for 20% (Preliminary Preferred Option), 10%, 2%
Recordkeeping and Reporting	Yes Require catch reporting	Yes Require catch reporting

2.3.1 Rationale for the Council’s Preliminary Preferred Alternative

In April 2019, the Council selected Alternative 2, Option 3 as its preliminary preferred alternative in both the BSAI and GOA. In doing so, the Council reviewed the scientific information in the discussion paper and referenced the NS guidelines, which provide additional clarification on determining to what extent a stock requires conservation and management. This initial review also considers the 10 NSs for consistency with this action as noted in Section 5 of this analysis.

In selecting the preliminary preferred alternative, the Council crafted the purpose and need statement to clarify that the key decision point facing the Council is to identify the appropriate level of conservation and management for sculpins based on the best available scientific information. As noted throughout this analysis, there are no conservation concerns for sculpins. Sculpins do play a role as benthic predators; however, they are not in need of rebuilding, they are not targeted as a food product in Alaska, fishing related mortality is low, and future uses of sculpins remain available. Therefore maintaining sculpins as a target species in the BSAI and GOA FMPs is not likely to improve or maintain stock condition.

EC species do not require specification of biological reference points, but should be monitored as new, pertinent scientific information becomes available to determine changes in their status or their vulnerability to the fishery. By prohibiting directed fishing, maintaining the MRA, and maintaining record keeping and reporting requirements, the status quo will effectively be maintained while precluding any significant increase in bycatch. Although sculpins may not require conservation and management, it is still appropriate to take measures to minimize sculpin bycatch to the extent practicable. This is consistent with National Standard 9 and the Council’s long-standing practice of minimizing the bycatch of species such as forage fish, grenadiers, and squids that are important to the ecosystem but that do not require conservation and management.

The preliminary preferred alternative would maintain the current MRA of 20%, Option 3, rather than imposing a more stringent MRA because a more restrictive MRA does not appear necessary. Table 3-8 shows the small percentage of retained sculpins compared to total retained groundfish. Sculpins are rarely retained and there is no evidence suggesting “topping off” for sculpins. A more restrictive MRA would not be expected to further reduce sculpins bycatch, but could impose additional monitoring and enforcement costs if a 2% or 10% MRA were exceeded.

Maintaining recordkeeping and reporting requirements would provide information necessary to evaluate bycatch and consider whether conservation and management become necessary. Furthermore, this action would not preclude the Council from moving sculpins out of the ecosystem component category and into a different management classification should conservation and management be required in the future.

3 Environmental Assessment

There are four required components for an EA. The need for the proposal is described in the Purpose and Need Statement, and the alternatives in Chapter 2. This chapter addresses the probable environmental impacts of the proposed action and evaluates the direct, indirect, and cumulative impacts of the alternatives and options on the various resource components. The economic and social impacts of this action are described in the Regulatory Impact Review (RIR) portion of this analysis (Chapter 4) and the MSA and FMP Considerations are discussed in Chapter 5. A list of agencies and persons consulted is included in Chapter 6.

Recent and relevant information, necessary to understand the affected environment for each resource component, is summarized in the relevant section. For each resource component addressed in this chapter, the analysis identifies the potential impacts of each alternative, and uses criteria to evaluate the significance of these impacts. If significant impacts are likely to occur, preparation of an EIS is required. Although an EA should evaluate economic and social impacts that are interrelated with natural and physical environmental effects, economic and social impacts by themselves are not sufficient to require the preparation of an EIS (see 40 CFR 1508.14). For this reason, significance criteria are not presented for the economic and social impacts discussed in Chapter 4.

An environmental assessment must consider cumulative effects when determining whether an action significantly affects environmental quality. The Council on Environmental Quality (CEQ) regulations for implementing NEPA define cumulative effects as:

“the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7).

The concept behind cumulative effects analysis is to capture the total effects of many actions over time that would be missed if evaluating each action individually. Concurrently, the CEQ guidelines recognize that it is most practical to focus cumulative effects analysis on only those effects that are truly meaningful.

3.1 Methods

3.1.1 Documents incorporated by reference in this analysis

This EA relies heavily on the information and evaluation contained in previous environmental analyses, and these documents are incorporated by reference. The documents listed below contain information about the fishery management areas, fisheries, marine resources, ecosystem, social, and economic elements of the groundfish fisheries. They also include comprehensive analysis of the effects of the fisheries on the human environment, and are referenced in the analysis of impacts throughout this chapter.

Alaska Groundfish Harvest Specifications Final Environmental Impact Statement (EIS) (NMFS 2007).

This EIS provides decision makers and the public an evaluation of the environmental, social, and economic effects of alternative harvest strategies for the federally managed groundfish fisheries in the GOA and the BSAI management areas and is referenced here for an understanding of the groundfish fishery. The EIS examines alternative harvest strategies that comply with Federal regulations, the BSAI and GOA FMPs, and the MSA. These strategies are applied using the best available scientific information to derive the TAC estimates for the groundfish fisheries. The EIS

evaluates the effects of different alternatives on target species, non-specified species, forage species, prohibited species, marine mammals, seabirds, essential fish habitat, ecosystem relationships, and economic aspects of the groundfish fisheries. A Supplemental Information Report was prepared in 2016 which considers new information, and affirms that the 2016 and 2017 harvest specifications, which were set according to the preferred harvest strategy, do not constitute a change in the action; and (2) the information presented does not indicate that there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. These documents are available from <https://alaskafisheries.noaa.gov/fisheries/groundfish-harvest-specs-eis>.

Stock Assessment and Fishery Evaluation (SAFE) Report for the Groundfish Resources of the BSAI/GOA (NPFMC 2018a, 2018b).

Annual SAFE reports review recent research and provide estimates of the biomass of each species and other biological parameters. The SAFE report includes the ABC specifications used by NMFS in the annual harvest specifications. The SAFE report also summarizes available information on the ecosystems and the economic condition of the groundfish fisheries off Alaska. This document is available from <https://www.fisheries.noaa.gov/alaska/population-assessments/north-pacific-groundfish-stock-assessment-and-fishery-evaluation>.

Final Programmatic Supplemental Environmental Impact Statement (PSEIS) on the Alaska Groundfish Fisheries (NMFS 2004).

The PSEIS evaluates the Alaska groundfish fisheries management program as a whole, and includes analysis of alternative management strategies for the GOA BSAI groundfish fisheries. The EIS is a comprehensive evaluation of the status of the environmental components and the effects of these components on target species, non-specified species, forage species, prohibited species, marine mammals, seabirds, essential fish habitat, ecosystem relationships, and economic aspects of the groundfish fisheries. A Supplemental Information Report (NPFMC and NMFS 2015) was prepared in 2015 which considers new information, and affirms that new information does not indicate that there is now a significant impact from the groundfish fisheries where the 2004 PSEIS concluded that the impact was insignificant. The PSEIS document is available from <https://www.fisheries.noaa.gov/action/alaska-groundfish-programmatic-supplemental-environmental-impact-statement-pseis>, and the Supplemental Information Report (SIR) from <https://www.fisheries.noaa.gov/resource/document/alaska-groundfish-fisheries-programmatic-supplemental-environmental-impact>.

Final Bering Sea Chinook Bycatch Management EIS (NMFS 2009).

This EIS provides decision-makers and the public with an evaluation of the environmental effects of alternative measures to minimize Chinook salmon bycatch in the Bering Sea pollock fishery. The alternatives analyzed in this EIS generally involve limits or “caps” on the number of Chinook salmon that may be caught in the Bering Sea pollock fishery and closure of all or a part of the Bering Sea to pollock fishing once the cap is reached. These closures would occur when a Chinook salmon bycatch cap is reached, even if the entire pollock TAC has not yet been harvested. The EIS document is available from <https://www.fisheries.noaa.gov/alaska/bycatch/chinook-salmon-bycatch-management-alaska#regulations-and-management-actions>.

Final EA/RIR for Bering Sea Chinook salmon and Chum salmon bycatch management measures (NMFS 2016).

This EA/RIR analyzes proposed management measures to address bycatch of Chinook salmon and chum salmon in the Bering Sea pollock fishery. The measures under consideration include

modifying chum salmon bycatch management within existing industry incentive plan agreements, adding more incentives to avoid Chinook salmon, modifying season lengths for the summer pollock fishery, and reducing the PSC limit and/or performance standard threshold implemented in the existing Chinook salmon bycatch management program. All of the alternatives were designed to improve the current management for chum salmon and Chinook salmon bycatch by providing pollock fishery participants opportunities for increased flexibility to respond to changing conditions and greater incentives to minimize bycatch of both salmon species, to the extent practicable. This EA/RIR is available from <https://www.fisheries.noaa.gov/resource/document/environmental-assessment-regulatory-impact-review-proposed-amendment-110-fmp>.

3.1.2 Resource components addressed in the analysis

Table 3-1 shows the components of the human environment and whether the proposed action and its alternatives have the potential to impact that resource component and thus require further analysis. Extensive environmental analysis on all resource components is not needed in this document because the proposed action is not anticipated to impact all resource components. The effects of the alternatives on the resource components would be caused by the removal of harvest specifications for sculpins and the relaxation of potential constraints on the groundfish fisheries in the BSAI and GOA. Thus, the alternatives have the potential to affect sculpins, PSC of halibut, and economic and social components. The potential economic and social impacts are discussed in Chapters 4 and 5.

No effects are expected on marine mammals, seabirds, habitat, and the ecosystem. No effect is presumed for these components because current fishing regulations (e.g., season and gear types), harvest limits, or regulations protecting habitat and important breeding areas as described in previous NEPA documents (NMFS, 2004, NPFMC and NMFS 2015) would not be changed by any of the alternatives. Sculpins do not appear to be important components of the diet of any seabirds or for Steller sea lion (Sinclair et al. 2013) or northern fur seals (e.g., Call and Ream 2012) or any other threatened or endangered, or depleted marine mammals in either the BSAI or GOA. Because sculpins are not an important part of any protected species’ diet, and because neither alternative will appreciably alter the historic catch of sculpins, the potential impacts of these alternatives on protected species (i.e. seabirds and marine mammals) are not considered further. The relaxation of the potential constraint by moving sculpins into the EC category would only potentially impact Pacific cod and flatfish trawl fisheries, which have the highest amounts of sculpin catch in the BSAI and GOA. These fisheries also encounter Pacific halibut, and Pacific halibut is the only prohibited species that may be affected by the proposed action. As a result, further analysis is included only for the resource components which the proposed action may impact: groundfish (sculpins), PSC of halibut, and economic and social components. Economic and social components are addressed in the Regulatory Impact Review in Section 4. Note that impacts to EC species are addressed under sculpins impacts as there is no expected impact to other EC species under either Alternative 1 or 2.

Table 3-1 Resources potentially affected by the proposed action and alternatives.

Potentially affected resource component							
Groundfish	Prohibited Species	Ecosystem Component Species	Marine Mammals	Seabirds	Habitat	Ecosystem	Economic and Social
Y-sculpins N-groundfish	Y-Halibut	N	N	N	N	N	Y

N = no impact anticipated by each alternative on the component.
 Y = an impact is possible if each alternative is implemented.

3.1.3 Methods used for the impact analysis

Data were sourced using NMFS Alaska Region CAS and ADFG/CFEC Fish Tickets in Comprehensive_FT. AKFIN compiles the Comprehensive datasets. CAS was used to show total catch and total retained amounts. Fish Tickets provided the amount of retained fish coded as fish meal. Ex vessel prices were also provided by Fish Tickets.

3.1.4 Cumulative effects analysis

This EA analyzes the cumulative effects of each alternative and the effects of past, present, and reasonably foreseeable future actions (RFFA). Based on Table 3-1, the resources with potentially meaningful cumulative effects are groundfish and prohibited species. Because the economic and social impacts of the alternatives are relatively limited and beneficial in nature, no meaningful cumulative economic or social impacts are expected from any of the alternatives. The cumulative effects on the other resources have been analyzed in numerous documents and the impacts of this proposed action and alternatives on those resources is minimal, therefore there is no need to conduct an additional cumulative impacts analysis.

Each section below provides a review of the relevant past, present, and RFFA that may result in cumulative effects on the resource components analyzed in this document. A complete review of the past, present, and RFFAs are described in the prior NEPA documents incorporated by reference and the SIR NMFS prepares to annually review the latest information since the completion of the Alaska Groundfish Harvest Specifications EIS. SIRs have been developed since 2007 and are available on the NMFS Alaska Region website. Each SIR describes changes to the groundfish fisheries and harvest specifications process, new information about environmental components that may be impacted by the groundfish fisheries, and new circumstances, including present and reasonably foreseeable future actions. NMFS reviews the reasonably foreseeable future actions described in the Harvest Specifications EIS each year to determine whether they occurred and, if they did occur, whether they would change the analysis in the Harvest Specifications EIS of the impacts of the harvest strategy on the human environment. In addition, NMFS considered whether other actions not anticipated in the Harvest Specifications EIS occurred that have a bearing on the harvest strategy or its impacts. The SIRs provide the latest review of new information regarding Alaska groundfish fisheries management and the marine environment since the development of the Harvest Specifications EIS and provide cumulative effects information applicable to the alternatives analyzed in this EA.

Actions are understood to be human actions (e.g., a designation of northern right whale critical habitat in the Pacific Ocean), as distinguished from natural events (e.g., an ecological regime shift). CEQ regulations require consideration of actions, whether taken by a government or by private persons, which are reasonably foreseeable. This requirement is interpreted to indicate actions that are more than merely possible or speculative. In addition to these actions, this cumulative effects analysis includes the effects of climate change.

Actions are considered reasonably foreseeable if some concrete step has been taken toward implementation, such as a Council recommendation or NMFS's publication of a proposed rule. Actions only "under consideration" have not generally been included, because they may change substantially or may not be adopted, and so cannot be reasonably described, predicted, or foreseen. Identification of actions likely to impact a resource component within this action's area and time frame will allow the public and Council to make a reasoned choice among alternatives.

3.2 Sculpins

3.2.1 Sculpins status and role in the ecosystem

Sculpins are relatively small, demersal, teleost fishes with modified pectoral fins that allow them to grip the substrate, and they lack swim bladders. They consist of 4 diverse families off Alaska (Cottidae, Hemitripterae, Psychrolutidae, and Rhamphocottidae). Sculpins are found in both freshwater and marine habitats, and are distributed throughout the BSAI and GOA where they occupy all benthic habitats along continental shelf and slope areas. Sculpins occupy depths from nearshore sand and mud bottoms at 20 m to below 1,000 m along broad sloping and steep canyon areas. Sizes for sculpins range from <10 cm to 80 cm. Forty-eight species of sculpins have been identified in waters off the coast of Alaska (Table 3-2). Most sculpins lay adhesive eggs in nests, and many exhibit parental care for eggs (Eschemeyer et al. 1983). This type of reproductive strategy may make sculpin populations more sensitive to changes in benthic habitats than other groundfish species such as walleye pollock, which are broadcast spawners with pelagic eggs.

Sculpins are predators of the shelf and slope ecosystems (TenBrink and Aydin 2009), consuming a wide variety of benthic prey including commercially important crabs and fishes. Larger sculpin species prey on shrimp, crabs, and fishes including juvenile walleye pollock. Smaller sculpin species feed mainly on shrimp and benthic amphipods.

Little is known about stock structure of sculpin species, and little research on stock structure has been done for sculpins in general. The diversity of sculpins in Alaska suggests that different components of the sculpin complex would react differently to natural or anthropogenic environmental changes. Within each sculpin species, observed spatial differences in fecundity, egg size, and other life history characteristics point to the existence of local population structures (Tokranov 1985). In the BSAI, yellow Irish lord has been found to exhibit spatial differences in fecundity between the eastern Bering Sea (EBS) and Aleutians Islands (AI) (TenBrink and Buckley 2013). TenBrink and Buckley (2012) found evidence for habitat partitioning among plain, great, and shorthorn sculpins, and they found that within species, larger individuals tend to be found in deeper water and that diet composition differed among and within species.

Sculpins range in size from less than 10 cm to 80 cm, and size differences may reflect their varied roles in the ecosystem. Length measurements (fork length) have been collected for a variety of sculpin species during AFSC trawl surveys. Size compositions of the five most abundant sculpin species in the EBS are shown in Figure 3-1, and for the three most abundant sculpin species in the AI in Figure 3-2. Size composition for the four most abundant sculpin species in the GOA are shown in Figure 3-3.

In the BSAI, the length compositions by species have not changed throughout the years data have been collected, with few small sculpins caught by the survey (Spies et al. 2016). Similarly, length compositions in the GOA have remained fairly stable with no strong trends apparent (Spies et al. 2017). The length composition data for blob, bigmouth, and spinyhead sculpins show two size modes, which are unrelated to sex but may indicate that two separate life stages inhabit the EBS slope. The length frequency of great and bigmouth sculpin sampled in the AI does not yield a complete representation of the sculpin species population's size composition, whereas yellow Irish lords show a consistent size composition. Specimens smaller than 70 mm have not been collected for many sculpins, which may be due to size selectivity of the survey gear.

Table 3-2 Sculpin species observed in the waters off Alaska.

Family	Scientific name	Common name
Cottidae	<i>Artediellus pacificus</i>	Pacific hookear sculpin
	<i>Artedius lateralis</i>	Smoothhead sculpin
	<i>Bolinia euryptera</i>	Broadfin sculpin
	<i>Enophrys bison</i>	Buffalo sculpin
	<i>Enophrys diceraus</i>	Antlered sculpin
	<i>Gymnocanthus galeatus</i>	Armorhead sculpin
	<i>Gymnocanthus pistilliger</i>	Threaded sculpin
	<i>Hemilepidotus</i>	Red Irish lord
	<i>Hemilepidotus jordani</i>	Yellow Irish lord
	<i>Hemilepidotus papilio</i>	Butterfly sculpin
	<i>Hemilepidotus spinosus</i>	Brown Irish lord
	<i>Hemilepidotus zaqpus</i>	Longfin Irish lord
	<i>Icelinus borealis</i>	Northern sculpin
	<i>Icelinus burchami</i>	Dusky sculpin
	<i>Icelinus filamentosus</i>	Threadfin sculpin
	<i>Icelinus tenuis</i>	Spotfin sculpin
	<i>Icelus spatula</i>	Spatulate sculpin
	<i>Icelus spiniger</i>	Thorny sculpin
	<i>Icelus uncinalis</i>	Uncinate sculpin
	<i>Jordania zonope</i>	Longfin sculpin
	<i>Leptocottus armatus</i>	Pacific staghorn sculpin
	<i>Microcottus sellaris</i>	Brightbelly sculpin
	<i>Myoxocephalus joak</i>	Plain sculpin
	<i>Myoxocephalus polyacanthocephalus</i>	Great sculpin
	<i>Myoxocephalus verrucocus</i>	Warty sculpin
	<i>Paricelinus hopliticus</i>	Thornback sculpin
	<i>Radulinus asprellus</i>	Slim sculpin
	<i>Rastrinus scutiger</i>	Roughskin sculpin
	<i>Thecopterus aleuticus</i>	Whitetail sculpin
	<i>Thyriscus anoplus</i>	Sponge sculpin
	<i>Triglops forticatus</i>	Scissortail sculpin
	<i>Triglops macellus</i>	Roughspine sculpin
<i>Triglops metopias</i>	Crescent-tail sculpin	
<i>Triglops pingelii</i>	Ribbed sculpin	
<i>Triglops septicus</i>	Spectacled sculpin	
Hemitripterae	<i>Blepsias bilobus</i>	Crested sculpin
	<i>Hemitripteris bolini</i>	Bigmouth sculpin
	<i>Nautichthys oculo-fasciatus</i>	Sailfin sculpin
	<i>Nautichthys pribilovius</i>	Eyeshade sculpin
Psychrolutidae	<i>Dasycottus setiger</i>	Spinyhead sculpin
	<i>Eurymen gyrinus</i>	Smoothcheek sculpin
	<i>Malacocottus zonurus</i>	Darkfin sculpin
	<i>Psychrolutes paradoxus</i>	Tadpole sculpin
	<i>Psychrolutes phrictus</i>	Blob sculpin
Rhamphocottidae	<i>Rhamphocottus richardsoni</i>	Grunt sculpin

Source: Spies et al. 2016

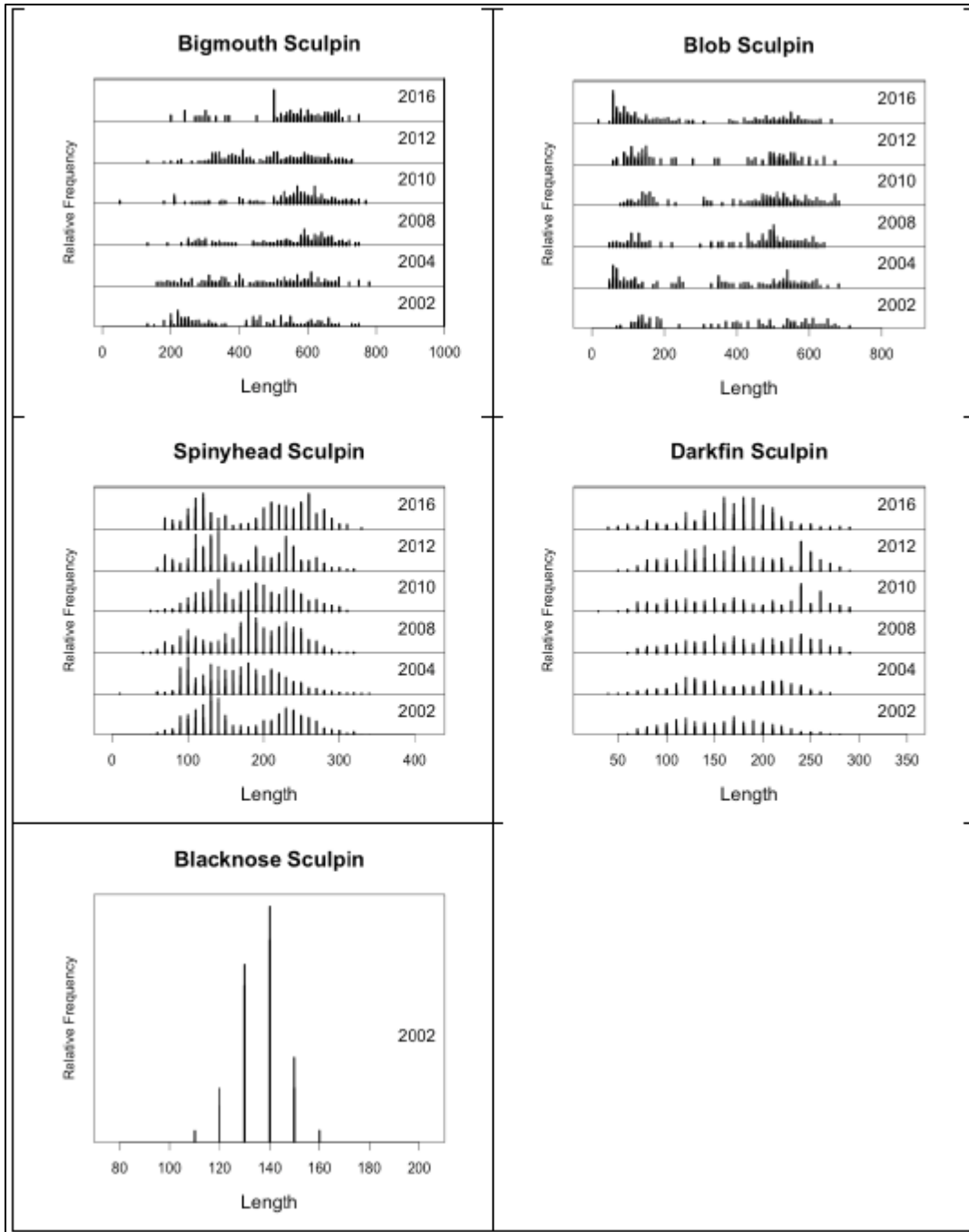


Figure 3-1 Length frequencies (fork length, FL in mm) from the EBS slope survey data for the five most abundant sculpin species sampled through 2016. Year range determined by available data. (Spies et al. 2016)

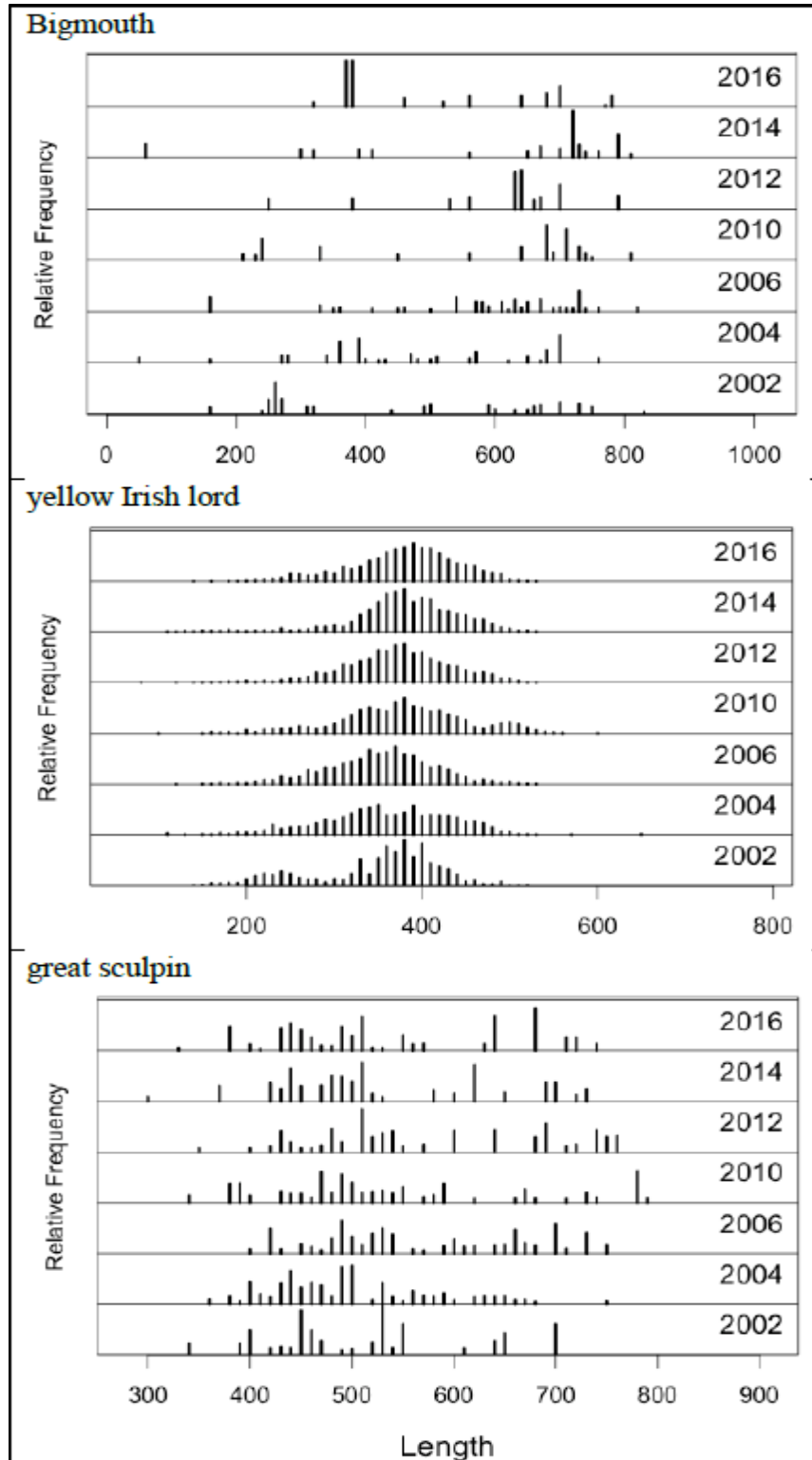


Figure 3-2 Length frequencies (fork length, FL in mm) for the three most abundant sculpin species in the AI, through 2016. Year range determined by available data. (Spies et al. 2016)

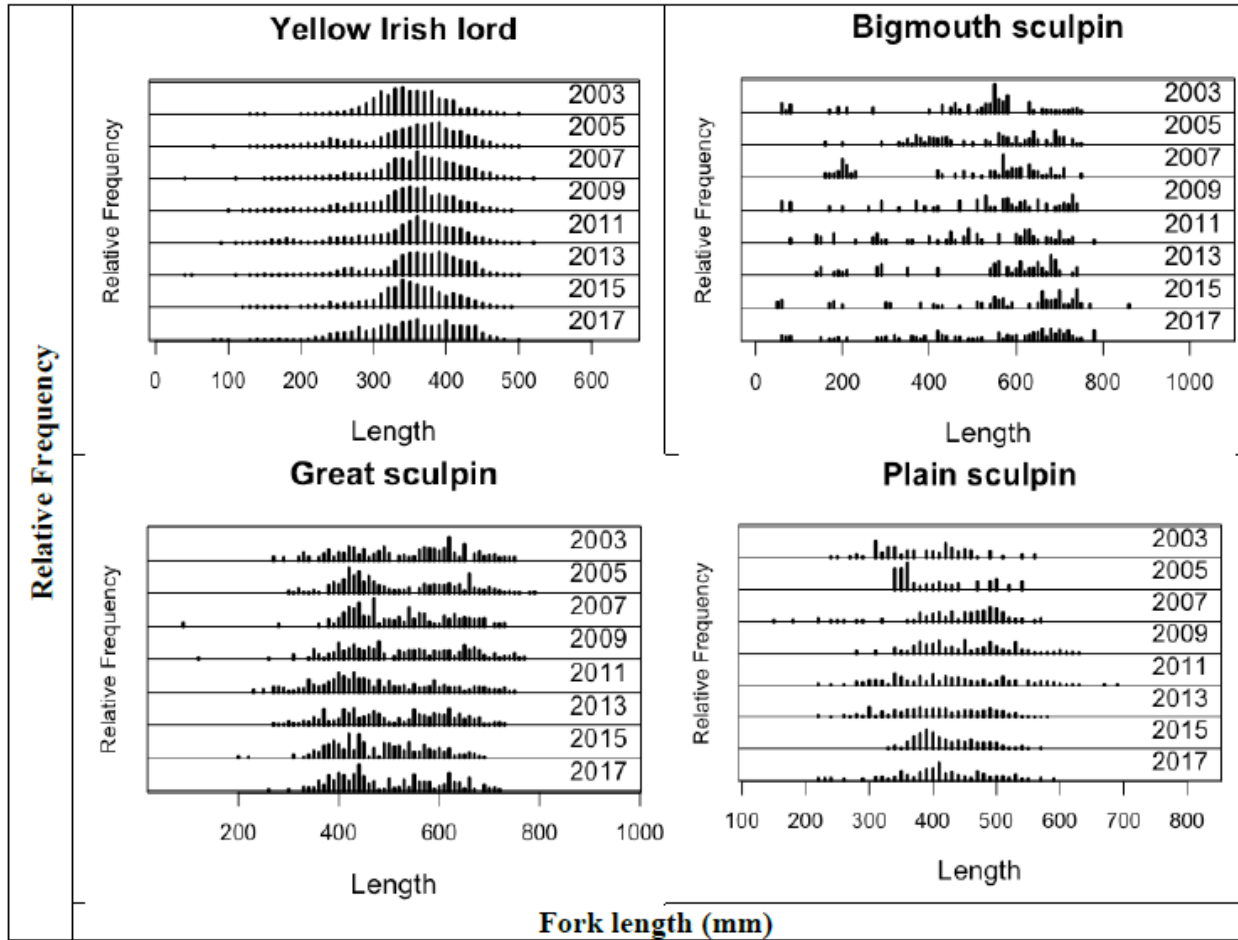


Figure 3-3 Length frequencies (fork length, FL in mm) from survey data for the 4 most abundant sculpin species in the GOA. Year range determined by available data. (Spies et al. 2017)

3.2.2 Harvest Specifications

3.2.2.1 EBS and AI Survey

The five most abundant species of sculpin from the EBS shelf survey are measured annually: plain and great sculpin since 1998, warty and bigmouth sculpin since 2000, and yellow Irish lord since 2003. Size compositions of blob, bigmouth, spinyhead, and darkfin sculpin are measured on the slope survey, and size compositions of bigmouth yellow Irish lord, and great sculpin are measured on the AI survey.

Research surveys provide biomass estimates for sculpin species in the BSAI. All three regions of the BSAI (EBS shelf, EBS slope, and AI) were sampled in 2004, 2010, 2012, and 2016 (Figure 3-4). The EBS shelf survey is performed annually, and the AI and slope surveys are typically biennial, although there was no AI survey in 2008 and no slope survey in 2014. The low coefficient of variation for most of the biomass estimates of the more abundant species suggests that the EBS shelf bottom trawl survey adequately estimates the biomass of these species (Spies et al. 2016).

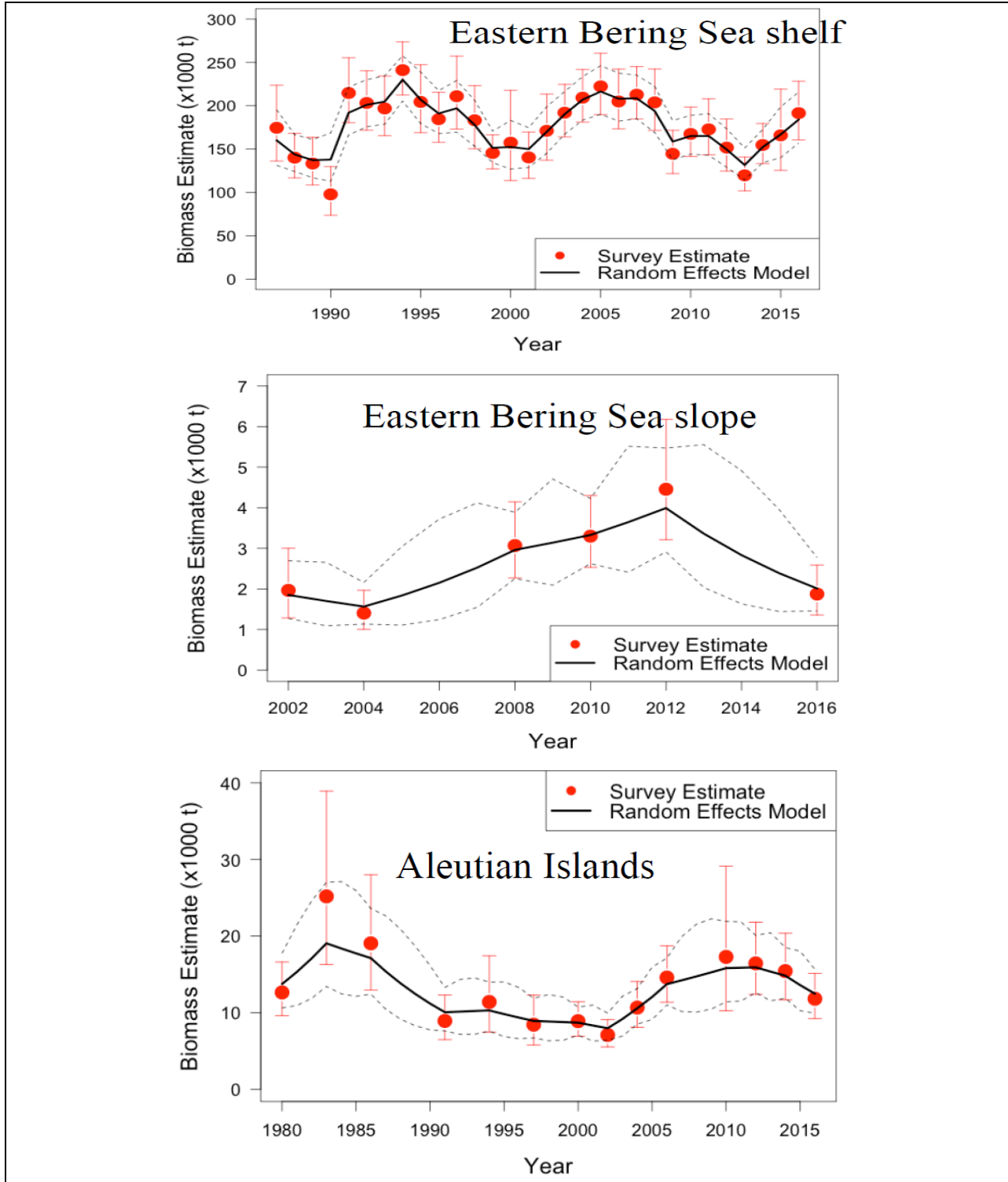


Figure 3-4 Random effects model estimates of biomass by region for the six most common shelf sculpins (top), slope (middle), and Aleutian Islands (bottom).

Error bars represent 95% confidence intervals for survey estimates of biomass, and dotted lines represent 95% confidence intervals from the random effects model. (Spies et al. 2016)

3.2.2.2 GOA Survey

Aggregate sculpin biomass estimates in the GOA are derived from the GOA bottom trawl surveys (Figure 3-5). In the GOA, approximately 97% of the sculpin biomass is comprised of the larger sculpin species: great, plain, bigmouth, and yellow Irish lord. Yellow Irish lord is currently the most abundant (59% of all sculpin biomass) followed by great sculpin (23%), bigmouth sculpin (14%), and plain sculpin (4%). The low coefficients of variation for the survey biomass estimates of the four most abundant species suggest that the GOA survey is doing an adequate job assessing the biomass of the more abundant species (Spies et al. 2017).

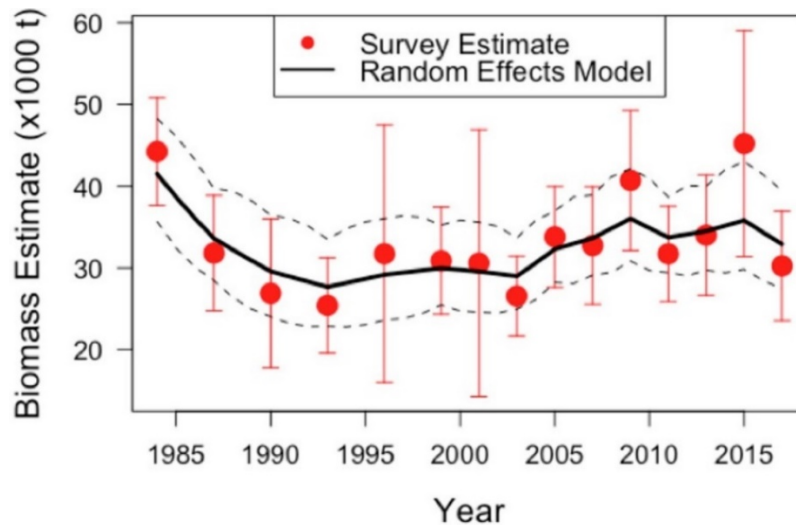


Figure 3-5 Random effects model estimates of biomass for the five most common sculpins in the GOA complex.

Error bars represent 95% confidence intervals for survey estimates of biomass, and dotted lines represent 95% confidence intervals from the random effect model. (Spies et al. 2017)

Sculpins are currently taken only as bycatch while directed fishing for other target species in the BSAI and GOA, and it is likely that future sculpin catch will continue to be dependent on the distribution and limitations placed on other target fisheries, rather than on any harvest level established for this category (Spies et al. 2016). Since 2011, the sculpin complex total catch (retained and discarded) has ranged from 2% to 6% of the total estimated sculpin biomass in the BSAI and GOA (Table 3-3).

Table 3-3 shows that in the BSAI catch has slightly exceeded the TAC in all years since 2011 except 2014. Catch in the GOA has been below the TAC since 2011. Sculpins in the BSAI were moved to prohibited species status and required to be discarded on October 6, 2017, but not in any other year. Sculpin catch was still substantially below ABC, OFL, and was a small proportion of the biomass in each year.

Table 3-3 Biomass (random effects model estimate), total allowable catch (TAC), acceptable biological catch (ABC), Overfishing Limit (OFL), catch of the BSAI (top) and GOA (bottom), and catch/biomass ratio for the sculpin complex 2011 to 2019. *Catch estimated through February 2019.

Year	BSAI					
	Biomass (mt)	OFL (mt)	ABC (mt)	TAC (mt)	Catch (mt)	Catch/Biomass
2011	199,348	58,300	43,700	5,200	5,377	0.03
2012	183,942	58,300	43,700	5,200	5,798	0.03
2013	171,523	56,400	42,300	5,600	5,864	0.03
2014	189,359	56,400	42,300	5,600	4,902	0.03
2015	186,386	52,365	39,725	4,700	5,003	0.03
2016	199,937	52,365	39,725	4,500	4,911	0.02
2017	188,656	56,582	42,387	4,500	5,338	0.03
2018	188,656	53,201	39,995	5,000	5,105	0.03
2019	188,656	53,201	39,995	5,000	771*	0.00

Year	GOA					
	Biomass (mt)	OFL(mt)	ABC(mt)	TAC (mt)	Catch (mt)	Catch/Biomass
2011	33,729	7,328	5,496	5,496	774	0.02
2012	34,112	7,641	5,731	5,731	794	0.02
2013	34,500	7,641	5,731	5,731	1,964	0.06
2014	35,155	7,448	5,569	5,569	1,182	0.03
2015	35,823	7,448	5,569	5,569	1,018	0.03
2016	34,340	7,338	5,591	5,591	1,330	0.04
2017	32,918	7,338	5,591	5,591	1,316	0.04
2018	34,943	6,958	5,301	5,301	610	0.02
2019	33,124	6,958	5,301	5,301	43*	0.00

Source: NMFS AKRO Catch Accounting System, accessed March 2019

3.2.3 Targeting, Catch, and Retention of Sculpins

Before 2010, sculpins were managed in each area as part of the BSAI and GOA “Other Species Complex” but have since been managed as an independent sculpins complex in both groundfish FMPs with their own catch limits in the harvest specifications (Table 3-3). For both the BSAI and GOA, sculpins are managed as a Tier 5 species, which is the least preferred method of specifying an overfishing limit when limited biological reference points are available. Only Tier 6 species, for which no biological reference points are available, are below Tier 5 in terms of limited information available. Nonetheless, specification of OFL for Tier 5 species reflects the best estimate possible for sculpins with the available data. Harvest specifications for the BSAI in the latest assessment were based on the 2016 random effects model estimate of the 6 most common sculpin species in the BSAI and the 2016 random effect estimate of the other sculpin species. Random effects model estimates of the sculpin complex and the six most common sculpin species in the EBS shelf, EBS slope, and AI have been fairly stable since the late 1980s on the EBS shelf, 2002 on the EBS slope, and 1980 in the AI (Spies et al. 2016). Similarly in the GOA, random effects model estimates of the sculpin complex have been fairly stable since 1984 (Spies et al. 2017).

There is no directed fishing for sculpin species in the BSAI or GOA at this time. Sculpins are caught primarily in the BSAI by trawl gear in directed fishing for yellowfin sole, rock sole, and Atka mackerel, as well as Pacific cod hook-and-line, pot, and trawl directed fishing (Table 3-4 and Table 3-5). Sculpins

are caught primarily in the GOA by Pacific cod, shallow-water flatfish directed fishing, and IFQ halibut fisheries (Table 3-6).

Sculpins, in general, are not retained, and fishery observer data indicate that the retention rate has been below 10% in the BSAI, and below 20% in the GOA. Since 2013, the retention rate has been below 5% in both the BSAI and GOA (Table 3-7). Table 3-8 shows the low percentage of retained sculpins compared to the total retained groundfish. As noted, section 3.2.2 above, sculpin catch has been substantially below ABC and OFL, and has been a small proportion of the biomass each year.

The analysts and the stock assessment author are not aware of any literature on sculpin discard mortality. In the absence of any data on discard mortality, 100% mortality of incidental catch of sculpins is assumed for the stock assessment.

Stock assessments provide the scientific basis for determining whether a stock is experiencing overfishing (i.e. when a stock's recent harvest rate exceeds sustainable levels) or overfished (i.e. already depleted), and for calculating a sustainable harvest rate and forecasting catches that correspond to that rate. Sculpins are not experiencing overfishing. For stocks in Tiers 4-6, no determination can be made of overfished status or approaching an overfished condition as information is insufficient to estimate the MSY stock level. Therefore, it is not possible to determine whether the sculpin complex is overfished or whether it is approaching an overfished condition because it is managed under Tier 5. However, in the absence of directed fishing, they are very unlikely to be overfished.

Table 3-4 Total catch in metric tons (mt) of all sculpins by target fishery in the Aleutian Islands, 2004 – 2018.

Aleutian Islands – Sculpin Catch (mt)															
Target fishery	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Alaska plaice	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
arrowtooth flounder	0	0	1	0	0	6	43	38	5	31	26	0	5	0	0
Atka mackerel	476	372	488	554	459	710	574	226	350	141	176	379	304	417	378
flathead sole	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
greenland turbot	0	0	0	1	2	1	0	0	0	0	0	0	0	0	0
halibut	5	1	4	0	5	0	0	2	0	11	26	49	19	14	24
Kamchatka flounder	0	0	0	0	0	0	0	19	22	34	5	5	4	0	1
other flatfish	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
other target	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
Pacific cod	360	213	374	406	400	492	722	114	359	291	69	370	101	288	230
bottom pollock	0	0	0	1	0	0	2	0	0	2	0	0	0	0	3
pelagic pollock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
rock sole	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
rockfish	49	34	40	56	72	61	52	103	71	116	88	121	81	113	75
sablefish	0	0	1	2	1	4	2	1	0	0	1	0	0	0	1
yellowfin sole	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total (t)	890	620	909	1,019	941	1,276	1,395	503	807	626	390	924	514	886	712

Source: NMFS AKRO Catch Accounting System, accessed March 2019

Table 3-5 Total catch in metric tons (mt) of all sculpins by target fishery in the Eastern Bering Sea, 2004 – 2018.

Eastern Bering Sea – Sculpin Catch (mt)															
Target fishery	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Alaska plaice	0	0	3	14	3	3	2	28	12	46	0	17	7	2	33
arrowtooth flounder	46	122	79	31	78	64	12	92	110	103	73	57	79	54	9
Atka mackerel	50	168	44	109	5	6	0	1	4	1	0	0	0	6	7
flathead sole	573	499	515	463	619	409	242	117	35	57	149	154	110	180	172
greenland turbot	5	1	1	1	1	1	1	1	1	0	2	2	21	33	30
halibut	1	0	1	0	4	0	0	2	0	44	35	57	89	48	47
Kamchatka flounder	0	0	0	0	0	0	0	29	1	0	14	27	16	7	10
other flatfish	55	59	10	26	1	1	2	0	1	1	0	2	9	12	3
other target	7	0	2	8	0	0	0	0	0	0	0	0	0	0	0
Pacific cod	3,157	2,533	2,277	2,333	1,663	1,255	1,123	1,562	1,618	1,545	1,972	2,040	2,296	2,082	1,995
bottom pollock	10	10	5	23	66	143	124	118	114	108	105	28	23	12	13
pelagic pollock	141	140	172	171	255	152	147	198	172	111	86	159	102	70	47
rock sole	268	463	675	760	1,090	1,292	918	903	955	1,286	807	447	689	614	748
rockfish	1	0	3	0	0	0	8	19	30	13	8	6	6	22	30
sablefish	1	0	0	0	1	1	1	0	0	1	0	0	0	0	0
yellowfin sole	941	1,147	1,124	2,432	2,896	2,562	1,631	1,804	1,937	1,921	1,260	1,083	949	1,309	1,248
Total (t)	5,255	5,142	4,911	6,372	6,681	5,889	4,211	4,874	4,990	5,237	4,511	4,079	4,396	4,451	4,392

Source: NMFS AKRO Catch Accounting System, accessed March 2019

Table 3-6 Total catch in metric tons (mt) of all sculpins by target fishery in the Gulf of Alaska, 2004 – 2018.

Gulf of Alaska – Sculpin Catch (mt)															
Target Fishery	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
arrowtooth flounder	7	19	36	38	16	16	27	69	21	52	149	36	56	105	35
Atka mackerel	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1
deep flatfish	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0
flathead sole	10	3	1	0	16	3	5	14	5	3	0	1	1	0	0
IFQ halibut	41	29	13	31	134	165	53	96	0	934	162	175	180	154	308
other target	0	0	0	0	0	11	0	12	2	0	0	0	0	1	0
Pacific cod	430	320	361	442	740	556	591	342	449	477	541	631	857	916	84
rex sole	19	11	7	8	4	31	11	3	11	9	1	6	0	4	2
rockfish	58	27	32	31	23	35	62	39	55	70	33	44	43	45	65
sablefish	2	16	4	7	2	20	1	3	5	41	6	12	7	11	5
shallow flatfish	129	200	125	376	959	515	155	143	227	357	251	87	165	55	94
walleye pollock	0	0	2	22	15	5	6	53	20	17	39	27	21	26	16
Total (t)	698	325	581	955	1,909	1,357	911	775	795	1,963	1,182	1,019	1,330	1,317	610

Source: NMFS AKRO Catch Accounting System, accessed March 2019

Table 3-7 Total catch in metric tons (mt) of sculpin complex, and proportion retained 2003 – 2018 in the BSAI and GOA groundfish fisheries and halibut fisheries starting in 2013.

Year	BSAI		GOA	
	Sculpin catch (mt)	% sculpins retained	Sculpin catch (mt)	% sculpins retained
2003	5,614	1%	629	7%
2004	6,020	1%	701	9%
2005	5,642	2%	626	16%
2006	5,733	3%	583	16%
2007	7,702	5%	960	19%
2008	7,368	6%	1,925	14%
2009	7,036	9%	1,374	18%
2010	5,624	4%	911	12%
2011	5,373	5%	763	10%
2012	5,798	5%	795	13%
2013	5,828	3%	1,966	1%
2014	4,865	3%	1,187	3%
2015	4,980	2%	1,016	1%
2016	4,410	2%	1,330	3%
2017	5,338	1%	1,316	1%
2018	5,105	2%	610	2%
2019	771	2%	43	3%

Source: NMFS AKRO Catch Accounting System, accessed March 2019

Table 3-8 shows the low percentage of retained sculpins compared to the total retained groundfish. In the BSAI, the proportion of retained sculpins relative to retained groundfish ranges from a low of 0.00 percent to a high of 0.02 percent. In the GOA, the percent of retained groundfish ranges from a low of 0.00 percent to a high of 0.04 percent.

Table 3-8 Retained catch (mt) of sculpins as a proportion of the retained catch of groundfish by area and year.

Area	Year	Retained Sculpins	Retained Groundfish	Percent of sculpins to groundfish
BSAI	2011	293	1,759,779	0.02%
	2012	280	1,802,101	0.02%
	2013	159	1,853,995	0.01%
	2014	126	1,866,660	0.01%
	2015	96	1,862,987	0.01%
	2016	92	1,914,510	0.00%
	2017	64	1,915,238	0.00%
	2018	95	1,911,314	0.00%
	2019	40	1,286,837	0.00%
GOA	2011	96	233,769	0.04%
	2012	108	244,979	0.04%
	2013	33	234,704	0.01%
	2014	44	312,299	0.01%
	2015	13	316,813	0.00%
	2016	39	316,420	0.01%
	2017	11	311,179	0.00%
	2018	13	247,021	0.01%
	2019	8	133,399	0.01%

Source: NMFS AKRO Catch Accounting System, accessed August 2019

3.2.4 Effects of the Alternatives on Sculpins

Sculpins are assessed on a 4-year stock assessment schedule in both the BSAI and GOA SAFE reports, with the next full sculpins assessment in the BSAI scheduled for 2019 and the next full assessment in the GOA scheduled for 2021 (NPFMC 2018a and 2018b). Table 3-8 describes the criteria used to determine whether the impacts on sculpin stocks are likely to be significant.

Table 3-9 Criteria used to determine significance of effects on groundfish stocks.

Effect	Criteria			
	Significantly Negative	Insignificant	Significantly Positive	No Indication for Concern
Fishing mortality	Changes in fishing mortality are expected to jeopardize the stock's ability to sustain itself.	Changes in fishing mortality are expected to maintain the stock's ability to sustain itself.	Changes in fishing mortality are expected to enhance the stock's ability to sustain itself.	Magnitude and/or direction of effects do not provide indication for concern.
Spatial or temporal distribution	Reasonably expected to adversely affect the distribution of sculpins either spatially or temporally such that it jeopardizes the ability of the stock to sustain itself.	Unlikely to affect the distribution of sculpins either spatially or temporally such that it has an effect on the ability of the stock to sustain itself.	Reasonably expected to positively affect sculpins through spatial or temporal increases in abundance such that it enhances the ability of the stock to sustain itself.	Magnitude and/or direction of effects do not provide indication for concern.

3.2.4.1 Alternative 1: Status Quo

Little is known about stock structure of sculpin species, and little research on stock structure has been done for sculpins in general. However, trawl surveys of the most abundant sculpin species in the BSAI and GOA are considered to adequately estimate the biomass of these species and offer the best available science (Spies et al. 2016 and 2017).

Sculpins are rarely retained, and fishery observer data indicate that the retention rate has been below 10% in the BSAI, and below 20% in the GOA. Since 2013, the retention rate has been below 5% in both the BSAI and GOA (Table 3-7). As noted in Table 3-3, sculpin catch has been substantially below ABC and OFL, and has been a small proportion of the biomass each year. Sculpins are not experiencing overfishing. In the absence of directed fishing, they are very unlikely to be overfished. Therefore, the current fishing mortality under status quo is considered not significant at a population level to affect the sculpin stock status under either FMP.

Sculpins are found in both freshwater and marine habitats and are distributed throughout the BSAI and GOA where they occupy all benthic habitats along continental shelf and slope areas. Sculpins occupy depths from nearshore sand and mud bottoms at 20 m to below 1,000 m along broad sloping and steep canyon areas. Within each sculpin species, observed spatial differences in fecundity, egg size, and other life history characteristics point to the existence of local population structures (Tokranov 1985). No genetic analysis has been done on sculpins to examine local stock structure and species-specific fishery impacts (Spies 2017a). There is some potential for localized depletion in specific areas where sculpin catch is concentrated; however, estimates of fishing mortality over a five-year period (2011-2015) indicate that the sculpin complex as a whole is lightly exploited relative to its ABC (Spies 2017a). While fishing activity could affect a spatially and temporally discrete area for a single species, it is not thought to have a population effect on sculpins as a whole. Therefore, spatial and temporal effects under status quo on sculpins are also considered not significant.

3.2.4.2 Alternative 2: (Preliminary Preferred Alternative) Designate sculpins in both BSAI and GOA FMPs as non-target ecosystem component species

Alternative 2 would neither decrease nor substantially increase the incidental catch of sculpins in groundfish fisheries as sculpins do not appear to be targeted in any way, thus catch is truly incidental. This alternative would provide for continued recordkeeping and reporting of sculpin catch as well as a periodically updated stock report. NMFS in-season management already monitors sculpin catch in the CAS, thus there is no additional burden to continue to monitor and report sculpin catch.

Alternative 2 would free approximately 5,000 mt of TAC under the 2 million mt OY limit for the BSAI. This TAC would be allocated to any groundfish target species during the annual harvest specifications process. The Council has previously considered issues associated with moving TAC (and harvest specifications flexibility) under the 2 million mt OY limit during the analysis for Amendment 105 to the BSAI groundfish FMP (79 FR 56671, October 23, 2014).

Alternative 2 options 1-3 would manage sculpins in the EC under an MRA. The options for MRAs include a 2% (option 1), 10% (option 2), and 20% MRA (option 3: status quo and **preliminary preferred alternative**). Sculpins are rarely retained and the sculpin retention rate (not relative to any basis species) has been below 5% in both the BSAI and GOA since 2013 (Table 3-7). It is not clear if there is any conservation benefit to a constraining MRA when sculpins are not being targeted or retained and there is little likelihood of topping off behavior. Therefore, any constraining MRA is most likely to increase required regulatory discards of sculpins if they exceed 2% or 10% rather than discourage targeting. The preliminary preferred MRA option would have the effect of increasing sculpin MRAs for arrowtooth and Kamchatka flounder as basis species from 3% to 20%. As discussed in Section 2.1, MRAs for these two species increased from 0% to 3% in 2013 to decrease discards and allow some retention of these two previously undesirable basis species. Because sculpins are rarely retained, this MRA increase is not anticipated to have any noticeable effect and it would be consistent with MRAs for all other basis species.

3.2.4.3 Cumulative Effects on Sculpins

Neither alternative is likely to change or increase the catch or retention of sculpins because they are not being targeted and there is currently no interest in targeting and little interest in retaining them. Both alternatives would include MRAs, and the amount of retention is unlikely to change. In addition, both alternatives would retain recordkeeping and reporting requirements to monitor and report catch of sculpins. Considering the direct and indirect impacts of the proposed action when added to the impacts of past and present actions previously analyzed in other documents that are incorporated by reference and the impacts of the RFFA listed above, the cumulative impacts of the proposed action are determined to be not significant.

3.3 Prohibited Species

Sculpin catch in the BSAI and GOA is most common in the Pacific cod and flatfish trawl fisheries. These fisheries also encounter Pacific halibut, and Pacific halibut is the only prohibited species that may be affected by the proposed action.

3.3.1 Effects of the Alternatives on Prohibited Species

Table 3-10 describes the criteria used to determine whether the impacts on Pacific halibut are likely to be significant.

Table 3-10 Criteria used to estimate the significance of impacts on incidental catch of Pacific halibut

No impact	No incidental take of the prohibited species in question.
Adverse impact	There are incidental takes of the prohibited species in question
Beneficial impact	Natural at-sea mortality of the prohibited species in question would be reduced — perhaps by the harvest of a predator or by the harvest of a species that competes for prey.
Significantly adverse impact	An action that diminishes protections afforded to prohibited species in the groundfish fisheries.
Significantly beneficial impact	No benchmarks are available for significantly beneficial impact of the groundfish fishery on the prohibited species, and significantly beneficial impacts are not defined for these species.
Unknown impact	Not applicable

Because none of the groundfish fisheries have ever been constrained by sculpin catch, and it is unlikely that either alternative will change the spatial or temporal distribution of Pacific cod or flatfish fishing effort, it is also unlikely that either alternative will have any detectible impact on the Pacific halibut population in either the BSAI or GOA. Therefore, the potential impacts on Pacific halibut or any other prohibited species under either alternative are considered not significant.

Alternative 2 would free approximately 5,000 mt of TAC under the 2 million mt OY limit for the BSAI. This TAC would be allocated to any species during the annual harvest specifications process. The Council has previously considered issues associated with moving TAC (and harvest specifications flexibility) under the 2 million mt OY limit during the analysis for Amendment 105 to the BSAI groundfish FMP (79 FR 56671, September 23, 2014). Because it is not possible to predict where the additional 5,000 mt of TAC would be allocated during the specifications process, it is not possible to determine whether impacts to other prohibited species could occur. It is reasonable to assume that whichever species (or combination of species) is allocated the additional 5,000 mt of TAC, that fishery would continue to encounter incidental catch (e.g. salmon) at the same rate, resulting in incremental increases in their total incidental catch. However, 5,000 mt is a relatively small number within the 2 mt OY limit for the BSAI, and drastic increases in incidental catch are not likely. The potential reallocation of the 5,000 mt of TAC, and the attendant impacts to PSC, will be an issue for the Council to consider during the annual specifications process.

4 Regulatory Impact Review

This Regulatory Impact Review (RIR) examines the benefits and costs of proposed alternatives pertaining to an action that would move sculpin species in the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area (BSAI FMP) and the Fishery Management Plan for Groundfish of the Gulf of Alaska (GOA FMP) from the target species category to the ecosystem component (EC). The RIR also assesses the potential impact of the alternatives on fishing communities and addresses other social impacts, if there are social impacts distinct from the economic impacts. In the case of this RIR, the potential impacts are primarily economic in nature. Information about the subsistence use of sculpins is provided in Section 4.4.3. Because the potential economic impacts are limited, analysts did not identify any impacts that would create adverse economic impacts on any fishing community or cause any other adverse social impacts.

The preparation of an RIR is required under Presidential Executive Order (E.O.) 12866 (58 FR 51735, September 30, 1993). The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following Statement from the E.O.:

In deciding whether and how to regulate, agencies should assess all costs and benefits of available regulatory alternatives, including the alternative of not regulating. Costs and Benefits shall be understood to include both quantifiable measures (to the fullest extent that these can be usefully estimated) and qualitative measures of costs and benefits that are difficult to quantify, but nevertheless essential to consider. Further, in choosing among alternative regulatory approaches agencies should select those approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity), unless a statute requires another regulatory approach.

E.O. 12866 requires that the Office of Management and Budget review proposed regulatory programs that are considered to be “significant.” A “significant regulatory action” is one that is likely to:

- Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local or tribal governments or communities;
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or
- Raise novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in this E.O. 12866.

4.1 Statutory Authority

Under the MSA (16 U.S.C. 1801, *et seq.*), the United States has exclusive fishery management authority over all marine fishery resources found within the exclusive economic zone (EEZ). The management of these marine resources is vested in the Secretary and in the regional fishery management councils. In the Alaska Region, the Council has the responsibility for preparing fishery management plans (FMPs) and FMP amendments for the marine fisheries that require conservation and management, and for submitting its recommendations to the Secretary. Upon approval by the Secretary, NMFS is charged with carrying out the Federal mandates of the Department of Commerce with regard to marine and anadromous fish.

Sculpin harvests in the EEZ off Alaska are managed under the FMP for Groundfish of the BSAI and GOA. The proposed action would amend these FMPs and Federal regulations at 50 CFR 679. Actions taken to amend FMPs or implement other regulations governing these fisheries must meet the requirements of all applicable Federal laws, Executive Orders, and regulations.

4.2 Purpose and Need for Action

The Council adopted the following purpose and need statement in April 2019:

Sculpins are benthic predators distributed throughout the BSAI and GOA where they occupy all benthic habitats along continental shelf and slope areas. No conservation concerns exist for sculpins in the BSAI and GOA. Sculpins are currently managed as target species despite being caught only incidentally, and an annual OFL, ABC, and TAC for the sculpin complex is specified separately for the BSAI and GOA. Incidental catch of sculpins has been substantially below ABC, OFL. There are no directed fisheries for sculpins in either the BSAI or GOA, and sculpin bycatch is rarely retained. If the total TAC of sculpins is caught, retention is prohibited for the remainder of the year.

The purposes of this action are to identify the appropriate level of conservation and management required for sculpins and to accurately classify the sculpin complex in the BSAI and GOA groundfish FMPs based on the best available scientific information. The revised General Section of the NS guidelines includes options for classification and management of target and non-target species in FMPs. Options for classification and management of non-target stocks include identification of the species as “non-target ecosystem component species, not in need of conservation and management.” The best available data indicate that sculpins are not in need of conservation and management and could be reclassified as non-target ecosystem component species.

4.3 Alternatives

Alternative 1, Status Quo

Under Alternative 1, sculpins would continue to be managed as target species in both the BSAI and GOA FMPs. OFL, ABC, and TAC would continue to be set for sculpins in both areas. Full stock assessments for sculpins would continue to be done every four years. While sculpins are classified as a target species, there is no directed fishing for sculpins, and they are only taken as incidental catch in groundfish fisheries in both FMP areas. Vessel operators and processors are required to report the catch and retention of sculpins on logbooks, landing reports, and production reports.

Under Alternative 1, current MRAs⁶ for sculpins would be maintained in the BSAI at 20% for most basis species, except for arrowtooth flounder (3%) and Kamchatka flounder (3%), and 20% for all basis species in the GOA (Table 10, GOA Retainable Percentages, and Table 11, BSAI Retainable Percentages, to 50 CFR 679). In 2013 NMFS increased the MRAs for groundfish species closed to directed fishing using arrowtooth flounder and Kamchatka flounder as the basis species from 0% to 3% for the “other species” group, which includes sculpins (78 FR 29248, June 19, 2013). MRAs allow vessels fishing for groundfish to retain a quantity of sculpins equal to, but no more than, a specified percent of the round weight or round weight equivalent of groundfish species open to directed fishing and retained on board the vessel at any time during a fishing trip. MRA percentages serve as a management tool to slow harvest rates and reduce the incentive for targeting species closed to directed fishing.

⁶ Sculpins are managed as “other species” for MRA amounts in both the BSAI and GOA.

Alternative 2. (Preliminary Preferred Alternative) – Move sculpins to the Ecosystem Component category in both FMPs.

Alternative 2 would move sculpins to the EC in both the BSAI and GOA groundfish FMPs. Harvest specifications (OFL, ABC, TAC) would no longer be required. Directed fishing for sculpin species would be prohibited. Vessel operators and processors would continue to be required to report the catch and retention of sculpins on logbooks, landing reports, and production reports under the same regulations that apply under status quo. Observers would continue to report the catch and discards of sculpins on observed vessels and estimates of sculpin harvests would continue to be recorded on any vessel required to use electronic monitoring. The AFSC would not direct resources to continue to explore methods to estimate biomass and assess the sculpin stocks. AFSC would however, continue to collect biomass information from the current surveys and report on the catch and survey biomass information in stand-alone reports that are included in the SAFE (similar to squids). These sculpin reports would likely be completed every four years according to the current schedule for assessing sculpins.

This alternative would also establish an MRA for sculpins. MRAs for sculpins caught incidentally by other BSAI and GOA groundfish fisheries would be derived pursuant to Tables 10 and 11 of 50 CFR 679. The MRA for the sculpins complex would minimize bycatch to the extent practicable consistent with NS 9 and allow retention of sculpins while providing flexibility to prosecute groundfish fisheries. Three options for MRAs are considered:

- Option 1 MRA = 2%
- Option 2 MRA = 10%
- Option 3 MRA = 20% [**Preliminary Preferred Alternative**]

Option 3 is the status quo for the most part for sculpins caught incidentally when fishing for groundfish while lower MRAs under options 1 and 2 are considered to discourage any targeted fishing for sculpins.

4.4 Description of Fisheries

4.4.1 Harvests, Management, and Retained Catch

Sculpins are currently taken only as incidental catch in fisheries directed at other target species in the BSAI and GOA, and it is likely that future sculpin catch will continue to be dependent on the distribution and limitations placed on other target fisheries, rather than on any harvest level established for this category (Spies et al. 2016). Since 2011, the sculpin complex total catch (retained and discarded) has ranged from 2% to 6% of the total estimated biomass of sculpins in the BSAI and GOA (Table 3-3).

Table 3-3 shows that in the BSAI catch has slightly exceeded the TAC in all years since 2011 except 2014. Catch in the GOA has been below the TAC since 2011. Sculpins in the BSAI were moved to prohibited species status and required to be discarded on October 6, 2017, but not in any other year. Sculpin catch was still substantially below ABC, OFL, and was a small proportion of the biomass in each year.

There is no directed fishery for sculpin species in the BSAI or GOA at this time. Sculpins are caught primarily:

- In the BSAI by:
 - trawl gear in fisheries targeting yellowfin sole, rock sole, and Atka mackerel, and
 - Pacific cod hook-and-line, pot, and trawl fisheries (Table 3-4 and Table 3-5).
- In the GOA by:
 - Pacific cod, shallow-water flatfish, and IFQ halibut fisheries (Table 3-6).

The retained catch of sculpins by gear and sector is shown in Table 4-1, illustrating that most retained catch is in the trawl sector. Sculpins, in general, are not retained, and fishery observer data indicate that the retention rate has been below 10% in the BSAI, and below 20% in the GOA. Since 2013, the retention rate has been below 5% in both the BSAI and GOA (Table 3-7). As noted in Section 3.2.2 above, sculpin catch has been substantially below ABC and OFL, and has been a small proportion of the biomass each year.

Table 4-1 Retained Catch of Sculpins in the BSAI and GOA Combined by Gear and Sector in metric tons (mt)

YEAR	Catcher Vessels delivering to Shoreside Processing Plants or Stationary Floating Processors		Catcher/ Processors and Motherships		TOTAL		
	Trawl	Nontrawl	Trawl	Nontrawl	Trawl	Nontrawl	Total
2011	144	4	241	0	384	4	388
2012	164	11	211	2	375	13	388
2013	60	5	126	0	187	5	192
2014	57	16	97	0	154	16	170
2015	41	4	64	0	105	4	109
2016	52	11	68	0	120	11	131
2017	23	8	44	0	67	8	75
2018	32	8	67	0	100	8	107

Source: NMFS AKRO Catch Accounting System, accessed April 2019

4.4.2 Value of Sculpins and Potential for Markets

Ninety-seven percent (97%) of the round weight equivalent of retained sculpins from 2006 - 2018 were processed into fish meal with the small remainder processed as whole fish, headed-and-gutted fish, and fillets. Table 4-2 provides ex vessel price per pound of catcher vessel (CV)-caught sculpins for both the BSAI and GOA from 2006 through 2017. The ex-vessel price for sculpins processed into fish meal has routinely been \$0.02 per pound or less.

Table 4-2 Ex vessel price per pound of catcher vessel (CV) caught sculpin for fish meal for both BSAI and GOA groundfish fisheries from 2006 through 2017.

Year	Ex vessel price per pound of CV sculpins that was processed into fish meal (\$)	
	BSAI	GOA
2006	0.02	0.02
2007	0.02	0.02
2008	0.01	0.02
2009	0.01	0.02
2010	0.02	0.02
2011	0.02	0.02
2012	0.02	0.02
2013	0.02	0.02
2014	0.02	0.00
2015	0.02	0.02
2016	0.02	0.00
2017	0.02	0.00

Source: AKFIN accessed 3/6/2019

A few Kodiak processors experimented with processing and marketing sculpins between 2006 and 2010, with one selling headed-and-gutted sculpins to a market in Eastern Europe. However, most processors find them too bony and difficult to process; thus, there is no current interest in developing a market for sculpins at this time.

4.4.3 Subsistence use of sculpins

There appears to be little information about subsistence use of sculpins in Alaska. A report by Kawerak (2013) was provided by Kawerak, Inc. (Nome, AK) and documents the use of non-salmon fish, including sculpins, for five villages in the Norton Sound region. This report shows that sculpins are among the wide variety of non-salmon fish utilized by Alaska Natives in the Norton Sound region. The Alaska Department of Fish and Game (ADFG) Community Subsistence Information System (CSIS) contains results of multiple subsistence harvest studies across Alaska. The CSIS database includes harvest information by community, and includes the villages summarized in Kawerak (2013), although data from the Kawerak (2013) study are not included in the CSIS database.

Table 4-3 shows the proportion of surveyed households in five Norton Sound villages that successfully harvested sculpins, as reported in the CSIS and in Kawerak (2013). Table 4-4 shows the estimated total number of pounds of sculpins harvested by those same Norton Sound villages. Although data are limited, they show the proportion of households that harvested sculpins varied from 0% to 54% of surveyed households in these villages. Total estimated harvest in these studies ranged from 0 to 946 pounds.

Table 4-3 Proportion of surveyed households in five Norton Sound region villages that harvested sculpins, reported in the ADF&G CSIS database (6/26/19) and in Kawerak (2013).

	Brevig Mission	Shishmaref	Stebbins	Teller	Wales
1980			0.083		
1982		0.535			
1984	0.286				
1989	0.133	0.095			
1993					0.071
1995		0.333			
2006	0	0.027	0.021	0	0
2014		0.035			
2009-10 ¹	0.014	0.213	0.043	0.038	0

¹Kawerak (2013)

Table 4-4 Total pounds of sculpins harvested in five Norton Sound region villages, reported in the ADF&G CSIS database (6/26/19) and in Kawerak (2013).

	Brevig Mission	Shishmaref	Stebbins	Teller	Wales
1980			56		
1982		0			
1984	0				
1989	65	506			
1993					8
1995		557			
2006	0	123	26	0	0
2014		21			
2009-10 ¹	2	946	51	150	0

¹Kawerak (2013)

Kawerak (2013) also summarizes Traditional Knowledge (TK) from the villages included in their survey. In general, sculpins are considered to require a lot of work to prepare and are considered a nuisance when they get caught in salmon nets because the spines tend to create large tangles. None of the villages reported that sculpins are targeted for subsistence but, rather, are caught incidentally when fishing for other subsistence species. Sculpins may have been targeted in the past as they are now considered “elder food” by some village residents.

4.5 Analysis of Impacts

This section provides a largely qualitative analysis of the primary benefits and costs of two alternatives: (1) Status Quo/No Action, (2) include sculpins in the BSAI and GOA FMPs as ecosystem component species whereby specification of OFL, ABC, and TAC would no longer be necessary.

4.5.1 Alternative 1: Status Quo

Alternative 1 would continue to manage sculpins as a target species in both the BSAI and GOA groundfish FMPs. OFL, ABC, and TAC will continue to be set for sculpins as a species group in both areas. Stock assessments for sculpins would continue to be done every 4 years. Directed fishing for sculpins could be allowed; however, there is no current interest in targeting sculpins. Therefore, sculpins are actually a non-target species as they are taken only as incidental catch in groundfish fisheries in both FMP areas.

At present, the optimum yield (OY) cap established in the Groundfish FMP for the GOA is substantially greater than the total of all GOA TACs. Therefore, managing sculpins as a target species group in the GOA does not require “funding” of sculpin TAC via reductions in TACs of any other groundfish species. In contrast, managing sculpins as a target species group in the BSAI FMP may have adverse effects on total revenue from the BSAI groundfish fisheries as a whole. The BSAI Groundfish FMP specifies a total OY cap of 2 million mt, and the total of all BSAI groundfish TACs may not exceed this 2 million mt cap. Thus, continuing to manage BSAI sculpins as a target fishery means that sculpins incidental catch would continue to be “funded” from reduced TAC of other, presently more valuable, BSAI groundfish species. The actual cost or foregone value of specifying a sculpin TAC in the BSAI, in terms of lower TACs of other higher valued groundfish target species, depends on which other TACs would have been increased in the absence of a sculpins TAC. Additional information about these higher valued species is described in section 4.5.2.

Alternative 1 would also continue to impose recordkeeping and reporting requirements on the groundfish fishing industry, as well as other fisheries management measures that apply to all groundfish fisheries depending on the gear type, area, and time of year that fishing occurs. Current MRAs for sculpins in the BSAI are 20% for most basis species, except for arrowtooth flounder (3%) and Kamchatka flounder (3%), and 20% for all basis species in the GOA.

4.5.2 Alternative 2: (Preliminary Preferred Alternative) Designate sculpins in both BSAI and GOA FMPs as non-target ecosystem component species

Under Alternative 2, which would include sculpins in the groundfish FMPs as ecosystem component species, OFLs, ABCs, and TACs, would not need to be established. Because the harvest of sculpins in recent years has been incidental catch in other groundfish target fisheries, the amount of sculpins harvested in the future is anticipated to remain within the ranges estimated for previous years. Most of the retained catch of sculpins is expected to continue to be processed into fish meal with the total ex-vessel value of sculpins remaining similar to past years. Current recordkeeping and reporting requirements and other management measures that apply to the groundfish fisheries would continue (with the possible exception of revisions to MRAs considered under “MRA Options” below).

Alternative 2 prevents targeting of sculpins and prevents directed fishing from being developed as well. However, if significant interest in targeting sculpins developed in the future, the Council could re-evaluate the status of sculpins at that time. Alternative 2 allows for a continued small amount of sculpins to be retained for personal use, subject to MRA limitations. Retention of sculpins for personal use is currently allowed, subject to MRAs. Sale of retained sculpins is allowed, subject to MRAs, only if the retained catch is processed into fishmeal.

A benefit of this alternative is that BSAI sculpins would not be ‘funded’ from reduced TAC of other, presently more valuable groundfish species. A reclassification of sculpins to a non-target category would free up about 5,000 mt of TAC in the BSAI which would be available for increased TACs for other more valuable groundfish target species. Freeing up additional TAC in the BSAI could potentially increase the value of the BSAI groundfish fisheries overall and to individual fishermen and processors who participate in the increase harvests relative to the value of the fisheries under Alternative 1. The additional TAC could be allocated to any species during the annual specifications process. As shown in Table 4-2, the ex-vessel value for fish meal, the primary product made from sculpins, is \$0.02/lb or less. Other groundfish species with TACs that could be increased if sculpins were no longer a target species in the BSAI include Pacific cod (average ex-vessel value in 2017 of \$0.30/lb), yellowfin sole (\$0.18/lb), pollock (\$0.12/lb), and a number of other species with higher ex-vessel value than sculpins (NMFS, 2019).

Alternative 2 is not expected to result in any changes in the groundfish fisheries that would increase safety concerns for vessels harvesting sculpins or any other groundfish target species.

4.5.2.1 MRA Options: Establish an MRA for sculpin species as incidental catch in the BSAI and GOA at Option 1 = 2%, Option 2 = 10%, or Option 3 = 20% (Preliminary Preferred Option)

The options included in Alternative 2 would establish an MRA for sculpins as incidental catch species in the BSAI and GOA using MRAs of 2%, 10%, or 20% in Tables 10 and 11 of 50 CFR 679 when directed fishing for groundfish species at a level to allow retention while providing flexibility to prosecute groundfish fisheries. In general, MRAs are the primary tool to regulate the catch of species closed to directed fishing. These MRAs do not necessarily reflect an “intrinsic” incidental catch rate but reflect a balance between the recognized need to slow harvest rates, minimize the potential for discards, and, in some cases, provide an increased opportunity to harvest available TAC through limited topping off fishing behavior. The incentive for vessels to engage in topping off activity is directly related to the value of, and available market for, the incidental catch species relative to the associated operation costs of

fishing for retaining the target species. To reduce the incentive for vessels to top off on an incidental catch species to avoid reaching the TAC, low MRA rates are often utilized.

The current MRAs for sculpins in the BSAI and GOA are 20% for most basis species, although retention of sculpins has been well below that amount in recent years (see Table 3-8). Nearly all retained sculpins are processed as low value fish meal at \$0.02 per pound, and with no real market for sculpins there is little incentive for fishermen to attempt to top off. Under Alternative 2, if sculpins are moved to the EC, fishermen and processors would still be able to retain sculpins for personal use or for sale as fishmeal, subject to MRA restrictions.

Options also include the establishment of an MRA at 2% or 10%. However, there appears to be no conservation issue that would necessitate reducing the MRA from the existing 20%. The amount of sculpins that are caught and retained currently is low and the economic value of the retained sculpins is also limited. Lower MRA percentages would likely have some negative impacts on individual vessels due to the need to sort and discard sculpins at sea to stay below a 2% MRA or 10% MRA. Since there appears to be no conservation issue that necessitates reducing the sculpins MRA from its existing 20% in the BSAI and GOA, and considering the limited economic value of sculpins, reducing the MRA to 2% or 10% would increase operating costs for vessels while not providing any perceivable conservation benefit. In addition, an MRA of 20% provides more opportunity to retain sculpins for personal use or for sale as fishmeal than would an MRA of 10% or 2%. A 20% MRA also allows for potential market exploration by fishing under an exempted fishing permit without having to take action to increase the MRA.

4.5.3 Effects on Fishing Communities and Other Social Impacts

The potential economic and social impacts of the alternatives are primarily economic in nature. Information about the subsistence use of sculpins is provided in Section 4.4.3. Because the potential economic impacts are limited, analysts did not identify any impacts that would create adverse economic impacts on any fishing community or cause any other adverse social impacts.

4.5.4 Affected Small Entities

The Regulatory Flexibility Act (RFA), first enacted in 1980 and amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (5 U.S.C. 601-612), is designed to place the burden on the government to review all regulations to ensure that, while accomplishing their intended purposes, they do not unduly inhibit the ability of small entities to compete. The RFA recognizes that the size of a business, unit of government, or nonprofit organization frequently has a bearing on its ability to comply with a Federal regulation. Major goals of the RFA are 1) to increase agency awareness and understanding of the impact of their regulations on small business, 2) to require that agencies communicate and explain their findings to the public, and 3) to encourage agencies to use flexibility and to provide regulatory relief to small entities.

The RFA emphasizes predicting significant adverse economic impacts on small entities as a group distinct from other entities, and on the consideration of alternatives that may minimize adverse economic impacts, while still achieving the stated objective of the action. When an agency publishes a proposed rule, it must either ‘certify’ that the action will not have a significant adverse economic impact on a substantial number of small entities, and support that certification with the ‘factual basis’ upon which the decision is based; or it must prepare and make available for public review an Initial Regulatory Flexibility Analysis (IRFA). Under section 603 of the RFA, an IRFA “shall describe the impact of the proposed rule on small entities.”

Under 5 U.S.C., section 603(b) of the RFA, each IRFA is required to contain:

- A description of the reasons why action by the agency is being considered;

- A succinct statement of the objectives of, and the legal basis for, the proposed rule;
- A description of and, where feasible, an estimate of the number of small entities to which the proposed rule will apply (including a profile of the industry divided into industry segments, if appropriate);
- A description of the projected reporting, record keeping, and other compliance requirements of the proposed rule, including an estimate of the classes of small entities that will be subject to the requirement and the type of professional skills necessary for preparation of the report or record;
- An identification, to the extent practicable, of all relevant Federal rules that may duplicate, overlap, or conflict with the proposed rule; and
- A description of any significant alternatives to the proposed rule that accomplish the stated objectives of the proposed action, consistent with applicable statutes, and that would minimize any significant economic impact of the proposed rule on small entities. Consistent with the stated objectives of applicable statutes, the analysis shall discuss significant alternatives, such as:
 1. The establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities;
 2. The clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities;
 3. The use of performance rather than design standards;
 4. An exemption from coverage of the rule, or any part thereof, for such small entities.

When an agency publishes a final rule, it must prepare a Final Regulatory Flexibility Analysis, unless, based on public comment, it chooses to certify the action.

As of January 2017, NMFS Alaska Region will prepare the IRFA in the Classification section of the proposed rule for an action. Therefore, the preparation of a complete IRFA is not necessary for Council final action on this issue. This section of the RIR provides information about the small entities that may be directly regulated by the alternatives and the general nature of those effects. This information is useful for the Council to consider in selecting among the alternatives analyzed in this EA/RIR and for NMFS to use to prepare the IRFA for the proposed rule, should the Council recommend implementation of Alternative 2.

The thresholds applied to determine if an entity or group of entities are “small” under the RFA depend on the industry classification for the entity or entities. Businesses classified as primarily engaged in commercial fishing are considered small entities if they have combined annual gross receipts not in excess of \$11.0 million for all affiliated operations worldwide (81 FR 4469; January 26, 2016). The most recent estimates of the number of fishing vessels participating in the BSAI and GOA groundfish fisheries that are small entities are provided in Table 2 in the IRFA for the BSAI and GOA Harvest Specifications for 2019-2020 (NMFS 2018). In 2017, there were 170 catcher vessels and 4 catcher/processors in the BSAI, and 821 catcher vessels and 3 catcher/processors in the GOA. These estimates likely overstate the number of small entities in the groundfish fisheries off Alaska because some of these vessels are affiliated through common ownership or membership in a cooperative and the affiliated vessels together would exceed the \$11.0 million annual gross receipts threshold for small entities.

Both alternatives would directly regulate any vessel operator harvesting sculpins in the federally managed groundfish fisheries in the BSAI and GOA. As described in Section 4.5.2, for operators of vessels currently participating in these fisheries, the economic impacts of Alternative 2 (the preliminary preferred alternative) are primarily beneficial or neutral. Vessel operators who wish to retain sculpins may still do so in the future, up to the MRAs. It’s possible that one or more vessel operators in the BSAI fisheries that experience larger TACs of higher valued groundfish species in the future under Alternative 2 could be small entities. The only potential adverse economic impact that has been identified for the preliminary

preferred alternative is that vessel owners or operators who wish to conduct directed fishing for sculpins in the future, and who would want to retain more sculpins than they would be allowed to retain under the MRA, would not be able to do so unless the Council chose to increase the MRA or reclassify sculpins back to the target category. However, based on the very limited interest in retaining sculpins in recent years, the potential for this adverse impact on small entities is very low. If a strong interest develops in the future, the Council could consider moving sculpins back to a target species.

4.6 Management and Enforcement Considerations

4.6.1 Alternative 1: Status Quo

While sculpins are only caught incidentally while directed fishing for other groundfish species, they are managed as target species under status quo and an annual OFL, ABC, and TAC for sculpins is specified separately for the BSAI and GOA. If the total TAC of sculpins is caught, retention of sculpins is prohibited for the remainder of the year, unless supplemented from the nonspecified reserve, as described below.

In the BSAI, a TAC nonspecified reserve system plays an important role in managing the groundfish TACs. Annually, 15 percent of each TAC is put into a nonspecified reserve.⁷ The TAC remaining after deductions to the nonspecified reserve is referred to as the initial total allowable catch (ITAC). The nonspecified reserve system provides a limited amount of flexibility to respond to yearly fluctuations in catch rates and maximize value to the industry. For species that contribute to the reserves, NMFS's Regional Administrator has the option of increasing an individual ITAC with TAC from the reserve, as long as the ABC and BSAI OY are not exceeded.

Catch of sculpins in the BSAI has slightly exceeded the TAC in all years since 2011 except 2014 and had to be funded from the nonspecified reserve. Catch in the GOA has been below the TAC since 2011. Sculpins in the BSAI were moved to prohibited species status and required to be discarded in October, 2017, but not in any other year. Sculpins catch has still been substantially below ABC, OFL, and a small proportion of biomass in each year (Table 3-3).

Primary management considerations:

- Monitoring catch at the individual trip level to ensure that the sculpins MRA is not exceeded;
- Monitoring cumulative catch to ensure that catch is not approaching the TAC;
- Determining if nonspecified reserves in the BSAI are available to be added to increase the ITAC;
- Placing sculpins on prohibited species status when total TAC is exceeded or projected to be exceeded; and
- Considering further directed fishing closures in the event harvest ever approaches the OFL.

Primary enforcement considerations:

- Challenge for enforcement to determine appropriate penalty for sculpins MRA overages due to low price of sculpins.

⁷ Except for pollock, the portion of the sablefish TAC allocated to hook-and-line and pot gear, and Amendment 80 species.

4.6.2 Alternative 2: (Preliminary Preferred Alternative) Designate sculpins in both BSAI and GOA FMPs as non-target EC species

Under Alternative 2, sculpins would be added to the EC of the BSAI and GOA groundfish FMPs. Under this alternative, OFL, ABC, and TAC would not be specified and directed fishing for sculpins would be prohibited. Reporting of sculpins incidental catch would continue to be required for purposes of continued monitoring of sculpins.

In addition to reducing constraints on directed fishing that incidentally catches sculpins, Alternative 2 would reduce NMFS’s inseason management burden. NMFS would not have to track total sculpins catch during the fishing year and there would be no need for inseason actions (e.g., placing sculpins on prohibited species status) to avoid exceeding a sculpins TAC or OFL. Because directed fishing on species in the ecosystem component is not allowed, NMFS would use an MRA for determining the amount of sculpins allowed to be retained by directed fisheries. The MRA is calculated as the proportion of an EC species that is retained/landed relative to the target/basis species retained/landed. MRA options included in Alternative 2 are 2%, 10%, or 20%.

The MRA for sculpins is 20% under status quo and retention rates greater than 20% have not been recorded BSAI and GOA (Table 3-7). A continued MRA of 20% (or greater) would reduce the burden for enforcement and industry by reducing the number of trips that are likely to exceed the MRA.

An MRA smaller than 20% could increase the burden on enforcement and industry and may create new problems in the execution of directed fishing of other groundfish species. If an MRA below 20% is selected, vessel crew may have to sort and discard sculpins at sea if the MRA is exceeded. While the retention rate of sculpins has been well below 20% relative to any basis species, NMFS OLE is concerned about the potential increased burden on industry to discard sculpins at sea, the probability that processors will not report overages of sculpins catch, and the potential for increased MRA violations with an MRA less than 20%. In the absence of a conservation concern for sculpins, a low MRA could create new problems and increase burden on industry and NMFS Office of Law Enforcement.

Implications for State Fisheries

Adding sculpins to the EC of the BSAI and GOA FMPs would have no implications for State fishery management. The FMPs do not preclude development of directed fisheries in State waters. The State’s current practice is to adopt the MRAs established for the federal fisheries in the State parallel fisheries and the State would likely adopt the Council’s selected sculpins MRA as it has with the existing MRA.

In sum, adding sculpins to the EC of the FMPs would reduce NMFS’s management burden as NMFS would not have to monitor a sculpins TAC, ABC, or OFL. However, NMFS’s enforcement burden is likely to increase should the Council select a MRA lower than the status quo.

A comparison of management considerations under Alternatives 1 and 2 is provided in Table 4-5.

Table 4-5 Comparison of sculpins management under Alternatives 1 and 2

	Alt 1 – No Action	Alt 2 (Preliminary Preferred Alt) – Ecosystem Component
Directed Fishing	No	No
MRA	Yes	Yes
OFL/ABC/TAC	Yes	No
Retained for use or sale	Yes	Yes
Total Catch Accounting	Yes	Yes ^b

^b Through existing Observer Program and catch accounting protocols

4.7 Summation of the Alternatives with Respect to Net Benefit to the Nation

Alternative 1 would continue to manage sculpins as a target species in both the BSAI and GOA groundfish FMPs. OFL, ABC, and TAC would continue to be set for sculpins as a species group in both areas. Given that sculpins has limited economic value as a marketable catch relative to many of the BSAI groundfish species, continuing to manage sculpins as a target species could decrease aggregate groundfish revenue in the BSAI.

Net benefits would likely increase under the Preliminary Preferred Alternative 2. Harvest specifications for sculpins would no longer be required. Alternative 2 would likely not affect current fishery revenue for sculpins, as a small amount of sculpins is retained and marketed as fish meal. A benefit of this alternative is that BSAI sculpins would not be 'funded' by reducing the TAC of other, presently more valuable groundfish species. In addition, Alternative 2 would also free up 5,000 mt of TAC in the BSAI for other fisheries to provide protein to the nation.

5 Magnuson-Stevens Act and FMP Considerations

5.1 Magnuson-Stevens Act National Standards

Below are the 10 National Standards (NS) as contained in the MSA, and a brief discussion of how each alternative is consistent NS, where applicable. In recommending a preferred alternative, the Council must consider how to balance the national standards.

NS 1 — Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.

Under Alternative 1, the status quo, sculpins would remain a target species in the groundfish FMPs even though they are only caught incidentally during directed fishing for other groundfish species. MRAs for sculpins as an incidental catch species would remain at 20% for most sculpins in order to prevent overfishing.

Alternative 2 would include sculpins in the BSAI and GOA groundfish FMPs as EC species that are not considered in need of conservation and management. The National Standard guidelines under section 600.305(c) provide direction for determining which stocks require conservation and management, and section 2.2.1 in this analysis applies that direction to sculpins.

As EC species under Alternative 2, harvest specifications (OFL, ABC, TAC) would no longer be required, but regulations would prohibit directed fishing for sculpins, require recordkeeping and reporting to monitor and report catch of sculpin species, and establish an MRA at a level (ranging from 2-20%) to allow retention while providing flexibility to prosecute groundfish fisheries.

At this time, sculpins are taken incidentally in the BSAI and GOA FMPs, and there are no directed fisheries targeting sculpins. Based on recent stock assessments prepared for sculpins they are not experiencing overfishing. In addition, fishing related mortality is low. Therefore, in the absence of a directed fishery, sculpins are unlikely to become overfished. Under the action alternative considered in this analysis, management measures could be adopted should recordkeeping and reporting indicate any vulnerability.

In terms of achieving OY from the fishery, Alternative 2 may enhance OY by taking into account marine ecosystems while continuing to provide the greatest overall benefit to the nation in terms of food production in the groundfish fisheries because it would free up about 5,000 mt of TAC in the BSAI for other fisheries to provide protein to the nation. Alternative 2 is consistent with management for maximum sustainable yield from the fishery while considering the ecological factors associated with sculpins.

NS 2 — Conservation and management measures shall be based upon the best scientific information available.

Information in this analysis represents the most current, comprehensive set of information available to the Council. Information previously developed on the BSAI and GOA groundfish fisheries, as well as the most recent information available, has been incorporated into this analysis (Section 3.1.1). It represents the best scientific information available.

NS 3 — To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.

Based on the most recent stock assessments prepared by NMFS for sculpins,⁸ the assessment authors have recommended OFLs and ABCs for sculpins in the BSAI and GOA management areas without further subdivision into smaller geographic areas. The annual TACs under Alternative 1 are set for sculpins according to the Council and NMFS harvest specification process. The Council would continue to recommend the TACs for sculpins be based on the most recent stock assessment and survey information, public testimony, and other socioeconomic considerations. Under Alternative 2, harvest specifications would no longer be required, but reports on sculpin biomass information would be produced every 4 years in accordance with the current stock assessment schedule for sculpins.

NS 4 — Conservation and management measures shall not discriminate between residents of different states. If it becomes necessary to allocate or assign fishing privileges among various United States fishermen, such allocation shall be; (A) fair and equitable to all such fishermen, (B) reasonably calculated to promote conservation, and (C) carried out in such a manner that no particular individual, corporation, or other entity acquires an excessive share of such privileges.

Nothing in the alternatives considers residency as a criterion for the Council's decision. Residents of various states, including Alaska and states of the Pacific Northwest, participate in the major sectors affected by these allocations. No discriminations are made among fishermen based on residency or any other criteria. It is not necessary to allocate or assign fishing privileges under either alternative.

NS 5 — Conservation and management measures shall, where practicable, consider efficiency in the utilization of fishery resources, except that no such measure shall have economic allocation as its sole purpose.

The wording of this standard was changed in the last MSA authorization, to consider rather than promote efficiency. Efficiency in the context of this change refers to economic efficiency, and the reason for the change, essentially, is to de-emphasize to some degree the importance of economics relative to other considerations (United States Senate, 1996). The analysis presents information relative to these perspectives and provides information on the economic risks associated with the alternatives in the RIR.

NS 6 — Conservation and management measures shall take into account and allow for variations among, and contingencies in, fisheries, fishery resources, and catches.

Alternatives 1 and 2 consider and allow for variations among, and contingencies in, fisheries, fishery resources, and catches. No directed fishing would occur under any alternative, although sculpins may be retained up to the authorized MRA. The 20% MRA allows for maximum consideration of variations among and contingencies in fisheries, fishery resources, and catches. Each alternative contains MRA options to limit bycatch and retention of sculpins in the groundfish fisheries. In addition, recordkeeping and reporting requirements under all alternatives ensure that changes in sculpin stock size, location, ecological interactions, and habitat changes, or changes in fishing practices will be noticed. Should it be determined that sculpins are not in need of conservation and management and therefore should be classified as an ecosystem component species under Alternative 2, conservation and management measures could be employed in the future to prevent overfishing, should the risk of overfishing arise. This establishes some protection against uncertainties.

⁸ The most recent full stock assessment for sculpins in the BSAI was in 2014 and the next will be in 2019. The most recent full stock assessment for sculpins in the GOA was in 2015 and the next will be in 2021. Stock assessments can be found at: <https://www.fisheries.noaa.gov/alaska/population-assessments/north-pacific-groundfish-stock-assessment-and-fishery-evaluation#groundfish-stock-assessments>

NS 7 — Conservation and management measures shall, where practicable, minimize costs and avoid unnecessary duplication.

Alternative 2 will continue to impose recordkeeping and reporting requirements on the groundfish fishing industry that are contained in Alternative 1, as well as fisheries management processes; however, given the small relative amount of sculpins incidental catch, these reporting requirements will have *de minimus* effects on fishery participants. Neither alternative imposes unnecessary burdens on the economy, on individuals, on private or public organizations, or on Federal, state, or local governments. Thus, all of the alternatives under consideration appear to be consistent with this NS7.

NS 8 — Conservation and management measures shall, consistent with the conservation requirements of this Act (including the prevention of overfishing and rebuilding of overfished stocks), take into account the importance of fishery resources to fishing communities by utilizing economic and social data that meet the requirements of National Standard 2, in order to (A) provide for the sustained participation of such communities, and (B) to the extent practicable, minimize adverse economic impacts on such communities.

The potential economic and social impacts of the alternatives are primarily economic in nature, with some increase in the overall value of the BSAI groundfish fisheries projected under the preliminary preferred alternative. To the degree that this increase in value represents increased earning and spending in a fishing community, the preferred alternative would benefit that particular fishing community or communities. If fishermen or processors are interested in retaining sculpins up to the MRA for personal use or for sale as fishmeal, the preliminary preferred alternative allows this. Analysts did not identify any impacts that would create adverse economic impacts on any fishing community or jeopardize the sustained participation of any fishing community, including subsistence users, in the GOA and BSAI groundfish fisheries.

NS 9 — Conservation and management measures shall, to the extent practicable, (A) minimize bycatch, and (B) to the extent bycatch cannot be avoided, minimize the mortality of such bycatch.

Regarding Alternative 2, ecosystem component species do not require specification of biological reference points, but should be monitored as new, pertinent scientific information becomes available to determine changes in their status or their vulnerability to the fishery. Alternative 2 would maintain the MRAs as tools to minimize bycatch of sculpins in other groundfish fisheries to the extent practicable. Retention of record keeping and reporting requirements would provide information necessary to determine whether bycatch of sculpins is minimized to the extent practicable.

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

None of the alternatives or options proposed would change the way in which any of the GOA or BSAI commercial fisheries are conducted, or reduce the flexibility of fishermen to decide when, where, and how to fish within established regulations. In addition, none of the alternatives would create circumstances that would increase risks to human life at sea. Therefore the alternatives under consideration appear to be consistent with NS10.

5.2 Section 303(a)(9) Fisheries Impact Statement

Section 303(a)(9) of the MSA requires that a fishery impact statement be prepared for each FMP amendment. A fishery impact statement is required to assess, specify, and analyze the likely effects, if any, including the cumulative conservation, economic, and social impacts, of the conservation and management measures on, and possible mitigation measures for (a) participants in the fisheries and

fishing communities affected by the plan amendment; (b) participants in the fisheries conducted in adjacent areas under the authority of another Council; and (c) the safety of human life at sea, including whether and to what extent such measures may affect the safety of participants in the fishery.

The EA/RIR prepared for these FMP amendments constitutes the fishery impact statement. The likely effects of the proposed action are analyzed and described throughout the EA/RIR. The effects on participants in the fisheries and fishing communities are analyzed in the RIR chapter of the analysis (Chapter 4) and the National Standard 8 section of Section 5.1. The effects of the proposed action on safety of human life at sea are evaluated in 4.5.2, and above under National Standard 10, in Section 5.1. Based on the information reported in this section, there is no need to update the Fishery Impact Statement included in the FMP.

The proposed action affects the groundfish fisheries in the EEZ off Alaska, which are under the jurisdiction of the Council. Impacts on participants in fisheries conducted in adjacent areas under the jurisdiction of other Councils are not anticipated as a result of this action.

5.3 Council's Ecosystem Vision Statement

The Council's Ecosystem Approach Vision Statement was approved by the Council in 2014, and is intended to be given effect through all of the Council's work. The Vision Statement states that:

The Council envisions sustainable fisheries that provide benefits for harvesters, processors, recreational and subsistence users, and fishing communities which (1) are maintained by healthy, productive, biodiverse, resilient marine ecosystems that support a range of services; (2) support robust populations of marine species at all trophic levels, including marine mammals and seabirds; and (3) are managed using a precautionary, transparent, and inclusive process that allows for analysis of tradeoffs, accounts for changing conditions, and mitigates threats.

Under both Alternative 1 and Alternative 2, directed fishing for sculpins would not be allowed. Sculpins could be taken as incidental catch and retained up to the MRA amount, which would allow for personal use or for sale as fishmeal within that MRA amount. There is not now, however, any interest in targeting sculpins. No fishery in the BSAI or GOA has been constrained by sculpins in the past, and it remains unlikely under Alternative 1 and Alternative 2 that any fishery would be constrained by sculpins. Under Alternative 1, assessments for sculpins would be conducted according to the current schedule for the BSAI and GOA. Under Alternative 2, full assessments would no longer be conducted, but data on sculpins would be reported to the Council regularly, as is practice for other EC species.

Under Alternative 1, TAC would continue to be set for sculpins in the BSAI and GOA. At present, the OY cap established in the GOA Groundfish FMP is substantially greater than the total of all GOA TACs. Therefore, managing sculpins as a target species in the GOA does not require "funding" of sculpin TAC via reductions in TACs of other groundfish species. In contrast, the BSAI Groundfish FMP specifies a total OY cap of 2 million mt, and the total of all BSAI groundfish TACs may not exceed this 2 million mt cap. Managing sculpins as a target species in the BSAI requires sculpin TAC to be "funded" from reduced TAC of other, presently more valuable, BSAI groundfish species.

Both Alternative 1 and Alternative 2 are consistent with the Council's Ecosystem Approach Vision Statement. However, Alternative 2 allows for greater flexibility under the BSAI FMP OY cap by allowing approximately 5,000 mt of TAC to be used for other groundfish. This is likely to provide some incremental benefit for harvesters, processors, and fishing communities in the Bering Sea and Aleutian Islands that is not realized under Alternative 1.

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7 References

- Call, K.A., R.R. Ream. 2012. Prey selection of subadult male northern fur seals (*Callorhinus ursinus*) and evidence of dietary niche overlap with adult females during the breeding season. *Marine Mammal Science* 28(1):1-15.
- NMFS [National Marine Fisheries Service]. 2004. Programmatic Supplemental Environmental Impact Statement for the Alaska Groundfish Fisheries Implemented Under the Authority of the Fishery Management Plans for the Groundfish Fishery of the Gulf of Alaska and the Groundfish of the Bering Sea and Aleutian Islands Area. NMFS Alaska Region, P.O. Box 21668, Juneau, AK 99802-1668. June 2004. Available at: <http://www.alaskafisheries.noaa.gov/sustainablefisheries/seis/intro.htm>.
- NMFS. 2007. Environmental impact statement for the Alaska groundfish harvest specifications. January 2007. National Marine Fisheries Service, Alaska Region, P.O. Box 21668, Juneau, Alaska 99802-1668. Available at: <http://www.alaskafisheries.noaa.gov/index/analyses/analyses.asp>.
- NMFS. 2019. Stock Assessment and Fishery Evaluation Report for the Groundfish Fisheries of the Gulf of Alaska and Bering Sea/Aleutian Islands Area: Economic Status of the Groundfish Fisheries off Alaska, 2017. Available at: <https://www.fisheries.noaa.gov/resource/data/2017-economic-status-groundfish-fisheries-alaska>.
- NPFMC (North Pacific Fishery Management Council). 2018a. Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Bering Sea/Aleutian Islands Regions. North Pacific Fishery Management Council. Anchorage, Alaska. Available at: <https://www.fisheries.noaa.gov/alaska/population-assessments/north-pacific-groundfish-stock-assessment-and-fishery-evaluation>.

- NPFMC 2018b. Stock Assessment and Fishery Evaluation Report for the Groundfish Resources of the Gulf of Alaska. North Pacific Fishery Management Council. Anchorage, Alaska. Available at: <https://www.fisheries.noaa.gov/alaska/population-assessments/north-pacific-groundfish-stock-assessment-and-fishery-evaluation>.
- NPFMC and NMFS. 2010. Essential Fish Habitat (EFH) 5-year Review for 2010: Summary Report, Final. April 2010. Available at: <http://www.fakr.noaa.gov/habitat/efh/review.htm>.
- NPFMC and NMFS. 2015. Alaska Groundfish Fisheries Programmatic Supplemental Environmental Impact Statement Supplemental Information Report, Final. November 2015. Available at: <https://alaskafisheries.noaa.gov/sites/default/files/sir-pseis1115.pdf>.
- NPFMC and NMFS. 2016. 2016 Review of Essential Fish Habitat (EFH) in the North Pacific Fishery Management Council's Fishery Management Plans: Summary Report, Final. October 2016. Available at: <https://npfmc.legistar.com/View.ashx?M=F&ID=4695297&GUID=70949C7D-81C4-40B2-9115-B32A6C78CE37>.
- Sinclair, E.H., D.S. Johnson, T.K. Zeppelin, T.S. Gelatt. 2013. Decadal variation in the diet of Western Stock Steller sea lions (*Eumetopias jubatus*). U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-248, 67p.
- Spies, I., K. Aydin, D. Nichol, W. Palsson, J. Hoff, T.T. Tenbrink. 2016. Assessment of the sculpin complex in the Bering Sea and Aleutian Islands. Available at: <http://www.npfmc.org/safe-stock-assessment-and-fishery-evaluation-reports/>.
- Spies, I., D. Nichol, K. Aydin, T.T. Tenbrink. 2017. Assessment of the sculpin complex in the Gulf of Alaska. Available at: <http://www.npfmc.org/safe-stock-assessment-and-fishery-evaluation-reports/>.
- Spies, I., T. TenBrink. 2017a. Draft evaluation of stock structure for the Bering Sea/Aleutian Islands sculpin complex. NMFS-AFSC, 22 p.
- TenBrink, T.T., K. Aydin. 2009. Life history traits of sculpins in the eastern Bering Sea and Aleutian Islands. North Pacific Research Board Final Report 628, 215 p.
- TenBrink, T.T., T. Buckley. 2012. Resource partitioning among *Myoxocephalus* sculpins, and their predator-prey relationships with *Chionoecetes* crabs in the eastern Bering Sea. Marine Ecology Progress Series, 464: 221-235.
- TenBrink, T.T., T. Buckley. 2013. Life history aspects of the yellow Irish lord, *Hemilepidotus jordani*, in the eastern Bering Sea and Aleutian Islands. Northwestern Naturalist 94: 126-136.
- Tokranov, A.M. 1985. Reproduction of great sculpin, *Myoxocephalus polyacanthocephalus* (Cottidae) in Kamchatka waters. J. Ichthyol. 24(4): 119-127.