

**Initial/Final Review Draft for Proposed Amendments
to the BSAI Crab, Scallop, and Salmon Fishery Management Plans for
Compliance with Standardized Bycatch Reporting Methodology (SBRM)**

February 2021

For further information contact: Sara Cleaver, North Pacific Fishery Management Council
1007 W 3rd Ave, Suite 400, Anchorage, AK 99501
(907) 271-2809

Abstract: This document describes a proposed action to amend the BSAI Crab, Scallop, and Salmon Fishery Management Plans for consistency with Standardized Bycatch Reporting Methodology (SBRM) requirements outlined in the Final Rule (82 FR 6317). This document describes 1) requirements and history of this action, 2) how these FMPs currently address SBRM, and 3) what action may need to be taken to provide consistency with SBRM requirements.

Accessibility of this Document: Effort has been made to make this document accessible to individuals with disabilities and compliant with Section 508 of the Rehabilitation Act. The complexity of this document may make access difficult for some. If you encounter information that you cannot access or use, please call us at [907-271-2809](tel:907-271-2809) so that we may assist you.

List of Acronyms and Abbreviations

Acronym or Abbreviation	Meaning
ADF&G	Alaska Department of Fish and Game
BSAI	Bering Sea and Aleutian Islands
CAS	Catch Accounting System
CFR	Code of Federal Regulations
CP	catcher/processor
CV	catcher vessel
EA	Environmental Assessment
EEZ	Exclusive Economic Zone
FMP	fishery management plan
FR	Federal Register
GOA	Gulf of Alaska
MRA	Maximum retainable allowance
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fishery Service
NOAA	National Oceanic and Atmospheric Administration
NPFMC	North Pacific Fishery Management Council
PSC	prohibited species catch
RIR	Regulatory Impact Review
SAFE	Stock Assessment and Fishery Evaluation
SBRM	Standardized Bycatch Reporting Methodology
Secretary	Secretary of Commerce

Table of Contents

1	Introduction.....	5
1.1.	Purpose and Need	5
2	Description of the Action.....	6
2.1.	SBRM Requirements under MSA and final rule	6
2.2.	BSAI Crab FMP.....	7
2.3.	Scallop FMP.....	9
2.4.	Salmon FMP	12
3	Magnuson-Stevens Act and FMP Considerations.....	16
3.1.	Section 303(a)(9) Fisheries Impact Statement	16
3.2.	Magnuson-Stevens Act National Standards.....	17
3.3.	Council's Ecosystem Vision Statement	20
4	Preparers and Persons Consulted	21
5	References.....	21

Executive Summary

Purpose

Section 303(a)(11) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires that any fishery management plan (FMP) establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery, and include conservation and management measures that, to the extent practicable and in the following priority— (A) minimize bycatch; and (B) minimize the mortality of bycatch which cannot be avoided.

On January 19, 2017, the National Marine Fisheries Service (NMFS) published a final rule (82 FR 6317) establishing national guidance for compliance with this requirement. As required by 50 CFR 600.1610(b), Councils, in coordination with NMFS, must review their FMPs and make any necessary changes so all FMPs are consistent with the guidance by February 21, 2022.

The regulations require that a FMP must identify the required procedure that constitutes the standardized reporting methodology for the fishery and explain how the procedure meets the purpose to collect, record, and report bycatch data.

The SBRM final rule requires the Council to explain how the SBRMs meet the stated purpose in the rule based on an analysis of four considerations: characteristics of bycatch in the fishery, the feasibility of the reporting methodology, the uncertainty of data resulting from the methodology, and how the data will be used to assess the amount and type of bycatch occurring in the fishery. The Council must address these considerations when reviewing or establishing a SBRM.

In February 2020, the Council received a report on current FMPs managed by NPFMC and their consistency with the SBRM Final Rule. At that meeting, the Council determined that the groundfish FMPs were in compliance with the SBRM final rule, while the BSAI Crab, Scallop, and Salmon FMPs needed further analysis to implement FMP amendments to be consistent. This report comprises the analysis of the SBRMs in the BSAI Crab, Scallop, and Salmon FMPs on behalf of the North Pacific Fishery Management Council (referred to herein as “Council” or “NPFMC”) for consistency with the national guidance in general, and the four considerations. The NMFS Alaska Regional Office will use this analysis, along with any other relevant information, to make FMP changes as necessary prior to the February 2022 deadline. As stated in the final rule, NMFS strongly recommends that the Council provide direction, as needed, to NMFS about how to adjust the implementation of a SBRM consistent with the FMPs. Additionally, the Council, in coordination with NMFS, should periodically review SBRMs to verify continued compliance with the MSA and the final rule. Such a review should be conducted at least once every five years.

Environmental Assessment

The proposed action has no potential to individually nor cumulatively affect the human environment. As such, it is categorically excluded from the need to prepare an Environmental Assessment.

Impact Analysis

The proposed action affects the BSAI Crab, Scallop, and Salmon FMPs, which are under the jurisdiction of the Council. The proposed action would add to or modify language in the FMPs to more transparently reflect and align with how bycatch is currently reported in the fisheries managed by the NPFMC. This action would not change how fisheries are managed, nor would the proposed action alter the way the fisheries operate. Based on the limited scope of the proposed action, impacts are not expected on fishery participants nor on participants in other fisheries.

1 Introduction

1.1. Purpose and Need

Section 303(a)(11) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) requires that any fishery management plan (FMP) establish a standardized reporting methodology to assess the amount and type of bycatch occurring in the fishery, and include conservation and management measures that, to the extent practicable and in the following priority—(A) minimize bycatch; and (B) minimize the mortality of bycatch which cannot be avoided.

On January 19, 2017, the National Marine Fisheries Service (NMFS) published a final rule (82 FR 6317) establishing national guidance for compliance with this requirement. As required by 50 CFR 600.1610(b), Councils, in coordination with NMFS, must review their FMPs and make any necessary changes so all FMPs are consistent with the guidance by February 21, 2022.

The national guidance, codified at 50 CFR 600.1605(a) defines a standardized reporting methodology as “an established, consistent procedure or procedures used to collect, record, and report bycatch data in a fishery.” This information, in conjunction with other relevant sources, is used to assess the amount and type of bycatch occurring in the fishery and inform the development of conservation and management measures to minimize bycatch. **The regulations require that a FMP identifies the required procedure that constitutes the standardized reporting methodology for the fishery and explain how the procedure meets the purpose to collect, record, and report bycatch data.** The proposed and final rules explain that a standardized bycatch reporting methodology (SBRM) may include, but are not limited to, data collection and reporting programs such as observer programs, electronic monitoring, and self-reported mechanisms (e.g. landing reports or “fish tickets”). The SBRM can be a single method or a combination of methods. This rule does not prescribe the use of particular procedures.

The SBRM final rule requires the Councils to explain how the SBRMs meet the stated purpose in the rule based on an analysis of the following four considerations. The Councils must address these considerations when reviewing or establishing a SBRM.

- 1) The characteristics of bycatch in the fishery, including:
 - Amount and type of bycatch occurring in the fishery
 - Importance of bycatch in estimating the fishing mortality of fishing stocks
 - Effect of bycatch on ecosystems
- 2) The feasibility of the methodology, from cost, technical, and operational perspectives.
- 3) The uncertainty of the data resulting from the methodology.
 - Uncertainty associated with resulting bycatch data must be able to be described, quantitatively or qualitatively
- 4) How the data resulting from the methodology will be used to assess the amount and type of bycatch occurring in the fishery.

These activities to collect, record, and report bycatch data in a fishery are connected to, but distinct from, the methods used to *assess* bycatch and the development of measures to minimize bycatch or bycatch mortality. Bycatch assessment methods are the statistical protocols that are used to estimate catch and bycatch. The final rule notes that bycatch assessment procedures are not part of a SBRM, and thus do not need to be described as part of the methodology in a FMP.

Finally, the rule provides that a Council should give guidance to NMFS on how to adjust the implementation of the SBRM consistent with the FMPs and requires periodic reviews of SBRMs at least once every five years. NMFS notes that, to the extent that adjustments are needed to a SBRM beyond what is established in a FMP, a FMP amendment would be required.

History of the Action

In February 2020, the Council received a report on current FMPs managed by NPFMC and their consistency with the SBRM Final Rule. At that meeting, the Council initiated an analysis to implement FMP amendments for the BSAI Crab FMP and the Scallop FMP. The amendments would explicitly identify a SBRM, and explain how it meets the SBRM purpose consistent with national guidance. At that time, the Council also noted that in developing the amendment to the Salmon FMP to address Cook Inlet, the Council would ensure that the SBRM is explicitly identified in the FMP for the West Area. Due to a disconnect in the timing of SBRM requirements and previous amendments to the Salmon FMP, the analysts have recommended a separate amendment to the Salmon FMP to address SBRM in the East Area (described in Section 2.4 below).

At the February 2020 meeting, the Council determined that the Arctic, Bering Sea and Aleutian Islands (BSAI) Groundfish, and Gulf of Alaska (GOA) Groundfish FMPs are all consistent with current SBRM guidance and that no amendments to those FMPs are necessary. No fishing is authorized in the Arctic Management Area. The Arctic FMP currently states that if fishing is authorized then a SBRM would be developed. Therefore, no amendment is necessary at this time. Both of the groundfish FMPs explicitly identify industry reports and Observer Program as the SBRM and explain how this SBRM collects, records, and reports bycatch. Evaluation of the SBRM components indicates that these FMPs are consistent with the SBRM final rule and therefore no amendments are necessary. A Memo to the record has been prepared to document NMFS' determination regarding the Arctic and Groundfish FMPs' consistency with SBRM regulations at 50 C.F.R. 600.1600 – 600.1610.¹

2 Description of the Action

2.1. SBRM Requirements under MSA and final rule

Under the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) (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 of Commerce (Secretary) and in the regional fishery management councils. In the Alaska Region, the NPFMC has the responsibility for preparing FMPs and FMP amendments for the regional 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.

The proposed action under consideration would amend the FMP for Bering Sea/Aleutian Islands King and Tanner Crabs, the FMP for the Scallop Fishery off Alaska, and the FMP for the Salmon Fisheries in the EEZ off Alaska. Actions taken to amend FMPs or implement regulations governing these fisheries must meet the requirements of applicable Federal laws, regulations, and Executive Orders.

This report comprises the review of the SBRMs on behalf of the Council for its BSAI Crab, Scallop, and Salmon FMPs for consistency with the national SBRM guidance in general, and the four considerations in particular. This may be done by referencing analyses and information in FMPs, FMP amendments, Stock Assessment and Fishery Evaluation (SAFE) reports, or other documents. The NMFS Alaska Regional Office will use this review, along with any other relevant information, to determine whether the SBRMs are fully consistent with the guidance, or if any FMP changes are necessary prior to the February 2022 deadline. As stated in the final rule, NMFS strongly recommends that the Council provide direction, as needed, to NMFS about how to adjust the implementation of a SBRM consistent with the FMPs. Additionally, the Council, in coordination with NMFS, should periodically review SBRMs to verify

¹ See Memo, referenced in Action Memo and included as an attachment on the e-Agenda.

continued compliance with the MSA and the final rule. Such a review should be conducted at least once every five years.

Definitions

The MSA defines “bycatch” as fish which are harvested in a fishery, but which are not sold or kept for personal use. This definition includes economic discards and regulatory discards, and excludes fish released alive under a recreational catch and release fishery management program (16 U.S.C. 1802(2)). This definition also excludes fish that are tagged and released alive under scientific tagging programs established by the Secretary of Commerce.

The final rule (82 FR 6317) includes a section on the meaning of “standardized” as it refers to a reporting methodology. The methodology must be an established, consistent procedure or procedures used to collect, record, and report bycatch data in a fishery (50 CFR 699.1605(a)). It does not mean that reporting methodologies must be standardized at a regional or national level; a standardized reporting methodology may vary from one fishery to another (including among fisheries managed in the same FMP).

2.2. BSAI Crab FMP

Bycatch Monitoring and Reporting

The FMP requires that vessel operators in the BSAI king and Tanner crab fisheries maintain a Federal logbook and delegates all other reporting requirements to the State. Bycatch monitoring and reporting in the fisheries managed under this FMP occur through the State of Alaska’s BSAI Crab Observer Program and industry reporting requirements.

Observer Program

Primary bycatch data collection and reporting is done through the State of Alaska’s BSAI Crab Observer Program. The State currently requires onboard observers on all C/P or floating-processor vessels processing king or Tanner (*C. bairdi* and *C. opilio*) crab, on a portion of CVs participating in the BSAI king and Tanner crab fisheries, and on all vessels participating in the Aleutian Islands red or golden king crab fisheries. The State may also require onboard observers in other crab fisheries (e.g., the Bering Sea Korean hair crab fisheries) to, in part, monitor bycatch of king or Tanner crab. Onboard observers provide effort data and data on the amount and type of bycatch occurring in each observed fishery, including estimates of crab bycatch by species, sex, size, and shell-condition/shell-hardness for each observed fishery. Observers account for all organisms found in the sampled pots, and group some bycatch species (B. Whiteside, 12/17/20, personal communication). Observers also collect length data for Pacific cod, halibut, yellowfin sole, and sablefish bycatch that are in the sampled pots (M. Westphal, 1/12/21, personal communication). These numbers are annually provided to stock assessment authors (M. Stickert, 12/31/20, personal communication).

Industry Reports

Reporting of crab catches by individual vessel operators was required as early as 1941. Current requirements include submission of the following information through eLandings: reporting the company or individual that purchased the catch; the full name and signature of the permit holder; the vessel that landed it with its license plate number; the type of gear used; the amount of gear (number of pots, pot lifts); the weight and number of crab landed including deadloss; bycatch of groundfish retained as bait (such as Pacific cod); the dates of landing and capture; and the location of capture. Processing companies are required to report this information for each landing purchased, and vessel operators are required to provide information to the processor at the time of landing. **Fishermen are not required to report any at-sea discards for any species on their fish tickets.**

Catcher vessel operators are required to fill out Federal Daily Fishing Logbooks (DFLs) and catcher processors are required to fill out Daily Cumulative Production Logbooks (DCPLs). Vessel operators are required to include information on at sea discards of groundfish, Pacific herring, Pacific halibut, Pacific salmon, king crab, and Tanner crab in these logbooks². While these data are not utilized on their own, the logbooks provide location and effort data that may be used by ADFG staff during dockside interviews to expedite the interview process. While data on effort and location are subsequently reported in eLandings, ADFG staff only enter fishing activity (not discards) into the database.³ DFLs are primarily used by NOAA Office of Law Enforcement for enforcement purposes and by ADF&G to collect catch and effort information by statistical area.

Evaluation of SBRM Components

1) Characteristics of bycatch

Bycatch in the BSAI crab fisheries are predominantly sublegal crab, female crab, non-target crab species, and to a lesser extent groundfish. A primary bycatch concern in crab fisheries is the impact of bycatch on non-target crab stocks, for example, discard mortality of red king crab in the Tanner or snow crab fisheries. While all of these species are fishery targets, red king crab cannot be retained or sold in Tanner or snow directed crab fisheries. Bycatch of the directed species – particularly of legal but sub-industry preferred size - is also a concern, especially for snow and Tanner crab fisheries. The Crab Observer Program provides information on the amount of bycatch occurring in the crab fisheries by recording bycatch on observed trips which allows for statistically robust extrapolation to unobserved trips. These data are used in stock assessments to estimate the total amount of bycatch in the fisheries. This information is important because it helps estimate mortality of commercially important stocks as well as ecosystem components. From this information, management action can be informed in order to mitigate adverse impacts to the extent practicable.

The Eastern Bering Sea (EBS) crab fisheries catch a small amount of groundfish and invertebrates as bycatch. Typically, the low level of bycatch of these species does not impact their abundance (Chilton, Swiney, Urban, Munk, & Foy, 2011). The EIS for the BSAI crab fisheries summarizes some of the effects of discards and offal production (NMFS 2004). Returning discards, process waste, and the contents of used bait containers to the sea provides energy to scavenging birds and animals that may not otherwise have access to those energy resources. The total offal and discard production as a percentage of the unused detritus already going to the bottom has not been estimated. (Chilton, Swiney, Urban, Munk, & Foy, 2011).

2) Feasibility

Before ADF&G implements onboard observer programs in particular fisheries, the Board of Fisheries must determine that it (1) is the only practical data-gathering or enforcement mechanism;(2) will not unduly disrupt the fishery; and (3) can be conducted at a reasonable cost. Feasibility is an important element of the Crab Observer Program and is addressed in several ways. First, depending on the data needs of each program fishery, observer coverage levels range from 20% to 100% in C/V categories, and 100% for all C/Ps. This helps ensure that the required data are collected and avoids unnecessary oversampling. This also limits any burden on the crew as far as vessel capacity- smaller C/Vs would not be selected to carry an extra person on every trip. Second, ADF&G has developed a diversified funding portfolio for the Crab Observer Program. Funds come from a combination Crab Rationalization Program cost recovery, test fishery revenues, ADF&G funds, and direct from industry in the “pay-as-you-go” C/P category. This funding structure makes costs feasible. Additionally, the Crab Observer Oversight Task Force was implemented to allow for industry feedback and input regarding the operation and development

² Crab DFL and DCPL logbook pages and instructions for reporting can be found at <https://www.fisheries.noaa.gov/alaska/resources-fishing/alaska-recordkeeping-and-reporting-logbook-logsheets>

of the Crab Observer Program and input to ADF&G on how test fishery revenues would be used in the Crab Observer Program. This helps ensure that the program continues to operate in a practicable manner for fishery participants.

For industry reporting, reporting through eLandings/fish tickets is a required and practical method of industry reporting.

In 2020, the Council considered an action to move to an eLogbooks structure for the crab fisheries DFLs due to industry complaints that the paper program is labor intensive, costly, lacks timeliness and would address management challenges associated with partial offloads. However, findings indicated eLogbooks would not address the issues associated with partial offloads and the costs discussions have been postponed until the industry can find more cost effective third party options than have been previously presented.

3) Data Uncertainty

Addressing data uncertainty is a key objective of the Crab Observer Program. Throughout the iterations of the Crab Observer Program, it has been amended to better address data uncertainty concerns (FMP Amendments 3 and 6). In order to ensure high quality data and minimize uncertainty, observers must also undergo training and maintain an observer certification before conducting their duties.

4) Data Use

Data specifically on crab bycatch are included in Crab Rationalization Program stock assessments to evaluate the biological characteristics of the stock and the impact of discard mortality. Bycatch assessment is done post-season as a part of the annual stock assessment process, with the exception of real-time reporting requirements for observers to report catch estimates for BBRKC near the Pribilof Islands to avoid exceeding OFLs for that stock. ADF&G generates bycatch estimates and makes them available to stock assessment authors.

Specific use of the data varies for each fishery. Generally, discard losses are determined by multiplying the appropriate handling mortality rate to discard estimates generated from observer data (Crab Plan Team, 2020). Estimates of bycatch mortality are added to the retained catch to determine if total fishery mortality exceeds federal overfishing limits (i.e. OFL and ABC). The State also frequently uses observers to address important research questions in the crab fisheries through special projects.

FMP Amendment

The combination of the Crab Observer Program and industry reports provides a SBRM that is consistent with the regulations. Descriptions of these management measures currently exist in the FMP; however, the FMP needs to be amended to explicitly identify the standardized methodology. To create consistency between the FMP and national SBRM guidance, a paragraph should be added to section 8.2 (Framework Management Measures) of the FMP to identify the SBRM and to explain how it meets the purpose of collecting, recording, and reporting bycatch. Descriptions of these management measures may be updated as needed in the FMP as it undergoes revisions and any such updates will be analyzed to ensure consistency with the SBRM regulations.

2.3. Scallop FMP

Bycatch Monitoring and Reporting

The FMP delegates reporting requirements to the State. Reporting primarily occurs through the State's Scallop Observer Program.

Scallop Observer Program

Primary bycatch data collection and reporting is done through the State's onboard Scallop Observer Program. The focus of the Scallop Observer Program is to monitor bycatch and to collect biological samples and fishery data relating to weathervane scallop harvest and discarded catch. Observer coverage is specified in State of Alaska regulations. The State currently requires 100% onboard observer coverage for all vessels fishing for scallops outside the Cook Inlet Area as a condition for obtaining a permit (NPFMC, 2014). For vessels fishing for scallops in the Cook Inlet Area (Kamishak Bay District), ADF&G staff may be deployed as observers; since there is only partial observer coverage, observer data would be extrapolated to any unobserved trips.⁴ The Observer Program is designed to answer questions necessary for successful management of the resource and to assess crab bycatch mortality.

The Weathervane Scallop Observer Training and Deployment Manual (ADF&G 2020) describes onboard observer duties and sampling methodology for observers participating in the Scallop Observer Program. The Scallop Observer Program collects a variety of biological data when the fishery is open. Each fishing day, the observer's goal is to sample one dredge from each of four hauls to document scallop, crab and halibut catch - referred to as Scallop Catch Sampling. During Scallop Catch Sampling the weight and number of individual scallops that are retained and discarded as well as the number of crabs and halibut caught are documented and certain biological data is collected. A subsample of discarded scallops are examined to determine the ratio of broken and intact scallops. Shell heights are measured from samples of both retained and discarded scallops, and shells are collected for age determination. Additionally, from one of the four hauls selected for Scallop Catch Sampling, observers also sample the remaining catch to document overall haul catch composition weight - referred to as Haul Composition Sampling. This remaining catch includes all species of animals other than live scallops and halibut. In Cook Inlet, bycatch is accounted for by extrapolating from full haul composition samples taken during observed tows. This information has been summarized by species group in past reports.

Observers report scallop harvest, fishing effort (dredge hours and number of tows), area fished, halibut and crab bycatch to ADF&G at minimum three times per week during the season by radio or email; these data are used extensively by ADF&G for inseason fishery management. Regulations in some scallop fishing areas specify bycatch rates or catches that result in closures or area modifications. For example, in-season data are used by the scallop industry to avoid areas of high crab bycatch (Scallop Plan Team, 2020). The ADF&G SAFE reports summarize data collected by the Observer Program and are made available to the public.

Industry Reports

All vessels fishing for scallops are required to fill out vessel operator logbooks supplied by ADF&G. In all areas with 100% observer coverage, the only bycatch data required to be documented in the logbooks is the number of king crab caught, as trips with 100% observer coverage rely primarily on observer bycatch data (F. Bowers, 1/8/20 personal communication). In the Cook Inlet Area where crab bycatch caps apply, vessel operators are required to document both Tanner and king crab bycatch on logbook sheets (E. Russ, 1/5/21, personal communication). Logbooks are checked by observers and submitted to ADF&G with other observer data forms and then summarized for the SAFE. Discards are not required to be reported on fish tickets, but they may be voluntarily reported.

Evaluation of SBRM Components

1) Characteristics of bycatch

Monitoring bycatch in the scallop fishery has been an important objective of the FMP since it was implemented due to the potentially high-impact nature of dredge gear. The primary bycatch concerns are crab species and Pacific halibut. Some groundfish bycatch also occurs in the fishery, but has an

⁴ In the Cook Inlet Area, typically about half the trips are observed depending on staff availability (E. Russ, 1/5/21 & F. Bowers, 12/30/20, personal communication)

insignificant effect on the productivity and thus the sustainability of any non-target groundfish species (NMFS, 2011). The Scallop Observer Program provides information on the amount of bycatch occurring in the scallop fisheries by recording bycatch from observed hauls which allows for statistically robust extrapolation to unobserved hauls. These data are important because it helps estimate mortality on commercially important stocks as well as ecosystem components. From this information, management action can be informed in order to mitigate adverse impacts to the extent practicable. These data are important for inseason management to ensure crab bycatch remains below established caps. Scallop fishing areas may be closed based on observed Tanner, snow/hybrid or king crab bycatch amounts.

Two broad categories of ecosystem impacts may result from scallop dredge fisheries: habitat alteration and gear-induced damage and mortality. However, bycatch data from the Scallop Observer Program indicates that habitat forming organisms (e.g. Gorgonian hard corals) are infrequently encountered in the scallop fishery (NMFS, 2011). There is strong evidence that scallop dredging reduces diversity in localized areas, at least in the near term. Differences in community abundance and diversity have been found in the Gulf of Alaska in areas either open or closed to dredging (Stone, Masuda, & Malecha, 2005). Glass and Kruse (2017) found evidence of recovery from disturbances by fishing gear in the Bering Sea scallop bed during periods of decreased fishing activity but found contrasting impacts in the Kodiak Shelikof district. Although a variety of marine vertebrates, invertebrates, and debris are caught incidentally in scallop dredges, weathervane scallops predominate catches. Further discussion of bycatch in the scallop fishery is included in the annual Scallop SAFE document (Scallop Plan Team, 2020).

2) Feasibility

The Scallop Observer program has been in place for 28 years. Observer coverage is scaled depending on potential bycatch concerns. In the Cook Inlet Area, where smaller vessels fish smaller dredges, there is not a 100% observer requirement, but ADF&G staff act as observers and must be accommodated on request. This makes the observer data collection methodology feasible for smaller vessels that typically harvest smaller quantities of scallops. In all other registration areas, where larger vessels fish larger dredges, 100% observer coverage is required and is funded by industry through direct payments to independent contracting agents who provide ADF&G-trained onboard observers to vessels. This makes the observer data collection methodology feasible for larger vessels that typically harvest larger quantities of scallops. State regulations require observers to be as unintrusive to vessel operations as practicable and must make the scope of their activities as predictable as possible in the performance of their assigned observer duties.⁵

3) Data Uncertainty

Due to the high potential bycatch mortality that can occur in the scallop fishery, 100% observer coverage is required in all areas except the Cook Inlet Area. For portions of the fishery that are observed, data are collected in a way that allows for estimates of uncertainty around expected values (e.g. confidence intervals given in Rosenkranz and Spafard, 2014). In the Cook Inlet Area, where there is partial observer coverage, allowable dredge size is smaller which helps to offset the increased uncertainty. Vessels operating in the area must accommodate an ADF&G observer on request. For unobserved trips, logbook entries are compared to observer data to see accuracy in Cook Inlet reporting of crab bycatch, and if different, observer data is used to calculate total crab bycatch.

4) Data Use

The primary purposes of the Scallop Observer Program are to collect essential biological and fishery-based data, monitor bycatch and provide for regulatory enforcement. Observer data is relayed (often in

⁵ Regulations in 5 AAC 39.141 (c)

real time) to ADF&G and the scallop industry in order to avoid areas of high crab bycatch (Scallop Plan Team 2020).

Data collected through the Scallop Observer Program and industry reports are integral to management of the scallop fishery. The State uses the information to make inseason adjustments to state harvest limits, fishing seasons, bycatch limits, and close areas in State and Federal waters to scallop fishing (ADFG, n.d.). According to the Scallop FMP, “In making such adjustments, the State may consider all available data on factors such as: (1) overall fishing effort; (2) catch per unit effort and rate of harvest; (3) rate of bycatch; (4) relative scallop abundance; (5) attainment of the upper end of GHRs or bycatch limits; (6) general information on stock condition; (7) timeliness and accuracy of catch reporting; and (8) other factors that affect the State’s ability to meet objectives of the FMP” (NPFMC 2014).

Additionally, information gained through the observer program and fishermen's observations have led to a better understanding of the biology, environmental requirements, and behavior of Alaska's scallop stocks. Because management decisions are made inseason based on fishery data from the fleet, the State's catch and processing reporting requirements are an important component in achieving the management objectives of the FMP (Rosenkranz and Spafard 2014).

FMP Amendment

The combination of industry reports and the Scallop Observer Program provides a SBRM that is consistent with the regulations and these components exist in the FMP. However, the FMP needs to be amended in order to explicitly identify the standardized methodology. The amendment could be added to Section 3.1 (Federal Management Measures) of the FMP to identify the SBRM and explain how it meets the purpose of collecting, recording, and reporting bycatch.

2.4. Salmon FMP

Bycatch Monitoring and Reporting

The FMP delegates reporting requirements to the State. ADF&G fish tickets serve as a standardized reporting method documenting all retained, non-targeted species in the East Area commercial salmon troll fisheries that are subject to maximum retainable allowances (MRAs). Discards at sea are not recorded, but unreported bycatch is thought to be very low and MRA overages have not occurred. The Pacific Salmon Commission collects Chinook salmon bycatch information and estimates Chinook mortality using region-specific rates.

The Fishery Management Plan for the Salmon Fisheries in the EEZ Off Alaska (Salmon FMP) generally divides management into two areas: An East Area and a West Area with the boundary at Cape Suckling. The Salmon FMP authorizes sport and commercial troll fishing in the East Area with management delegated to the State of Alaska. In the West Area, commercial fishing is not authorized.

Sport Fishery

In the East Area, the sport fishery for salmon takes place almost entirely within state waters (there is little reason for sport fishermen to fish for salmon seaward of state waters). The sport harvest of salmon from the EEZ is estimated to be a few thousand salmon, less than one percent of the combined state and federal marine waters sport harvest. Due to the minimal harvest within the EEZ, it is expected that bycatch in this fishery is minimal.

ADF&G has conducted the Statewide Harvest Survey⁶ to estimate sport fishing annual effort (angler-days), harvest (fish kept) since 1977, and total catch (fish kept plus fish released) since 1990. Effort,

⁶ See Appendix A of the Alaska State Sport Fish Harvest Survey, 2014 (<https://www.adfg.alaska.gov/fedaipdfs/ROP.SF.4A.2013.07.pdf>)

harvest, and catch estimates are available for species commonly targeted by sport anglers. These estimates are by region and area, but are not specifically available for the EEZ. Questions are mainly geared towards understanding the total catch and days fished in each region rather than gathering trip-specific information. In Southeast Alaska, ADF&G has conducted a creel survey and port sampling program to estimate effort (angler days), harvest, and catch. Similar to the Statewide Harvest Survey, information collected by creel technicians is primarily geared towards understanding angler effort and catch.

Salmon charter boat guides are required to fill out Saltwater Guide Logbooks to show where fishing effort occurs, the extent of participation, and the species and numbers of fish kept and released by individual clients. Logbook data are available specifically for state and federal waters in Southeast Alaska since 2010.

East Area Commercial Troll Fisheries

Management of the commercial troll fishery in the EEZ, including many reporting requirements, is delegated to the State of Alaska and the fishery is managed as a single unit throughout federal and state waters.

The commercial troll fishery in Southeast Alaska and Yakutat occurs in State of Alaska waters and in the EEZ east of the longitude of Cape Suckling and north of Dixon entrance. All other waters of Alaska and the EEZ are closed to commercial trolling. The commercial troll fishery harvests primarily Chinook and coho salmon; though chum, sockeye, and pink salmon are also harvested. The troll fleet also incidentally harvests Pacific halibut under Individual Fishing Quota (IFQ) regulations, and lingcod and rockfish under state regulations. The winter and spring Chinook salmon troll seasons only occur in state waters - all outer coastal areas, including the EEZ, are closed. The summer Chinook salmon season and coho salmon season occur both in state and federal waters. Directed harvest on chum salmon is limited and primarily occurs in terminal or near terminal waters close to hatchery facilities. The focus of this analysis is on the fisheries that occur in the EEZ - coho and summer Chinook salmon season. State water fisheries are outside of the scope of this analysis. When all salmon species are combined, less than one percent of the troll harvest was reported to be taken in EEZ waters.

ADF&G regulations require the reporting of all *retained* species on fish tickets, even if they are not sold. While not required, vessel operators may voluntarily report discards. Fish tickets are generated by processors and are either entered into eLandings or documented on paper. At-sea processors in the troll fishery generate their own fish tickets. There is no observer coverage in the salmon troll fishery and all data are self-reported. Reports must include the type of gear used as well as the number, pounds, delivery condition, and disposition of all fish species retained for both commercial and personal use (5 AAC 39.130(c)).

MRAs for lingcod, DSR, black, blue, and dark rockfish species, other rockfish, and spiny dogfish allow for the incidental catch of those species to be utilized. ADF&G publishes annual Advisory Announcements outlining groundfish bycatch allowance in the salmon troll fishery and retained catch for these species are documented on fish tickets. Halibut may also be retained subject to IFQ Program regulations or in the hand troll fishery under federal subsistence regulations. Halibut taken incidentally during the troll fishery must be reported on an ADF&G fish ticket using the CFEC salmon permit. A non-retention requirement is in place when MRAs are reached, and any halibut or groundfish caught without proper permits (IFQ QS or FFP endorsement) are discarded at sea. **There are no reporting requirements for the at-sea discards of bycatch in the troll fishery.**

Unreported harvest and discard-at-sea mortality is not estimated (apart from Chinook salmon) but is thought to be low. Hook and line troll gear used in the fishery allows for nearly all discarded species to be released with limited mortality, and specified closure areas during times of year when bycatch is generally highest serves to significantly reduce the amount of bycatch taken. The Pacific Salmon Commission collects information on Chinook salmon bycatch in the troll fisheries to estimate drop-off and shaker

mortality rates and minimize Chinook salmon bycatch.⁷ Drop-off mortalities are estimated using region-specific rates as a percentage of the total nominal encounters for troll and recreational fisheries, and shaker mortality estimates are calculated using a general algorithm (Pacific Salmon Commission, 2004). The State of Alaska closes Chinook salmon high abundance waters after the first summer period, which affects both the bycatch of groundfish and the incidental catch of non-target salmon species.

If changes to bycatch reporting in the East Area are determined to be necessary to ensure proper compliance with the SBRM requirements, a new action would need to be initiated.

West Area Salmon Fisheries

Commercial salmon fisheries in the FMP's West Area are not authorized. However, commercial salmon fishing does occur in three pockets of the EEZ referred to as "traditional net fishing areas." At this time, these areas are excluded from the FMP and Federal management, so the SBRM requirement does not apply. In December 2020, the Council voted to amend the Salmon FMP to include the Cook Inlet traditional net fishing area that has been excluded from the FMP. The Council also voted to manage the area by closing it to commercial salmon fishing, consistent with commercial salmon management in the West Area. In accordance with section 304 of the MSA, the Council soon will be submitting to NMFS a FMP amendment that reflects the Council's recent decision. As no federally managed commercial salmon fishing is currently occurring, nor would occur if the Council's FMP amendment is approved by NMFS, in the Salmon FMP West Area Management Area, no standardized bycatch reporting methodology is necessary at this time.

Evaluation of SBRM Components

1) Characteristics of bycatch

Bycatch in the East Area directed commercial salmon troll fisheries primarily consists of groundfish and other salmon species. Halibut is also incidentally caught in salmon troll fisheries and may be retained subject to possession of IFQ. As noted above, groundfish incidentally taken by hand and power troll gear being operated to take salmon (consistent with applicable laws and regulations) can generally be legally retained, subject to closures or maximum retainable amounts.

The troll fishery is considered a relatively clean fishery due to the selectivity of the gear and the low levels of discards. For the non-salmon species that are caught, there is a high incentive to retain and sell these species, as is permitted under the annual MRAs. MRAs for groundfish species in the troll fishery have never been exceeded (F. Bower, 12/18/2020 personal communication). Unreported harvest and discard-at-sea mortality of groundfish is not estimated, but is thought to be low given the nature of troll gear and times and locations fished. No evidence suggests salmon troll gear impacts habitat. The activity targets only adult salmon in the water column, successfully avoiding any significant disturbances of benthos, substrate, or intertidal habitat.

In the State of Alaska's *Policy for the Management of Mixed Stock Salmon Fisheries* (5 AAC 39.220), conservation of wild salmon stocks consistent with sustained yield is given the highest priority. Alaska's salmon fisheries are managed to maintain escapement within levels that provide for MSY. Management plan provisions such as weekly fishing periods and size limits work to reduce the incidental catch of non-target salmon species in the salmon fishery so that stocks are able to achieve their established escapement

⁷ Drop-off mortality includes fish that escape or drop-off prior to being brought to the board, but die as a result of the encounter with fishing gear. Shakers are Chinook salmon that are encountered by fishing gear, brought to the boat, and released during a Chinook retention fishery because they are either below or above legal size limits. A proportion of these fish will die and become shaker mortalities. (Pacific Salmon Commission Joint Chinook Committee Report – Estimation and Application of Incidental Fishing Mortality in Chinook Salmon Management Under the 199 Agreement to the Pacific Salmon Treaty Report TCCHINOOK (04)-1)

goals. Chinook salmon bycatch mortality is estimated by the Pacific Salmon Commission, which is then used to evaluate catch and escapement data for Chinook salmon stocks.

For the sport fishery, ADF&G studies for recreationally-caught salmon have estimated catch-and-release survival rates which vary based on location and fishing methods. One study estimated hook-and-release fishing mortality for Chinook salmon in the Kenai River was 13% for males and 7% for females (Bendock & Alexandersdottir, 1990). Other studies done in the Kenai River have estimated mortality rates of 40%, 17%, 24%, and 47% for coho (Stuby, 2002). Most of the studies conducted were within river systems or near river mouths, so estimates may not be able to be generalized to ocean-caught salmon.

2) Feasibility

Commercial troll fishery:

There is no Observer Program for this fishery and implementing one would have high costs and be difficult to deploy since most troll vessels average 40 feet LOA. Reporting requirements for at-sea discards would create additional costs and operational burdens that would not be outweighed by the benefits of additional data. **At-sea discards and bycatch concerns are very low in this fishery due to the selectivity of gear, seasonality, and the implementation of closed areas during times of the year when bycatch is generally highest.** ADF&G fish tickets serve as a standardized reporting method for all retained harvest from both state and EEZ waters, and while not required, vessel operators may voluntarily report discards. Fish tickets impose almost no additional time or cost burden on fishery participants or agencies beyond the reporting of basic and already required landings data, and as such, are a feasible method to collect data.

Sport fishery:

Saltwater Guide Logbooks are an extremely inexpensive and feasible method for recording released species in the charter sportfish fishery. Guides are required to record the catch and release of all species listed in the Saltwater Guide Logbook (Chinook 28" and larger, Chinook under 28", coho, sockeye, other salmon, halibut, GAF halibut, lingcod, pelagic rockfish, yelloweye rockfish, nonpelagic rockfish, sablefish, and salmon shark) for each angler. Saltwater Logbooks have traditionally been a paper page filled out for every trip that are submitted to ADF&G, but have the option to submit records using an eLogBook. eLogBooks have more options for species kept and released during a fishing trip, as they are not limited to what can fit on a single page (J. Hasbrouck, 1/6/2021 personal). As of 2021, sport fish guide businesses operating in Southeast Alaska are required to use eLogBooks.

3) Data Uncertainty

Data are collected for the following: incidentally caught species that are retained and utilized subject to MRAs, species subject to MRAs but forfeited to the State because the MRA has been reached (but this has never occurred), or species retained for personal use. These data are all self-reported, which may increase uncertainty. Data uncertainty primarily comes from unreported harvest and discard-at-sea mortality, neither of which have reporting requirements in place. As stated in the final rule for SBRM, NMFS recognizes that different degrees of data uncertainty may be appropriate for different fisheries. The uncertainty in the data collected for these fisheries has been noted by the State, but additional management measures for documenting bycatch interactions have been determined to not be necessary due to the low volume of the fishery combined with the low mortality from troll gear.

4) Data Use

As noted above, data on at-sea discards are not collected in the East Area commercial salmon troll fishery. However, bycatch that is not retained is presumed to be very low due to the nature of the gear, seasonality of the fishery, and incentives in place through MRAs.

Data on retained, non-target species are recorded in eLandings and is accessible to NMFS, IPHC, and ADFG. Data collected on the amount and type of retained groundfish harvested incidentally in the Southeast Alaska troll fishery in the Southeast region groundfish report is prepared for the State Board of Fisheries on a 3-year cycle. Reported harvest of groundfish from EEZ waters is small when compared to harvest totals from all of Southeast Alaska and occurs during the months of July, August, and September when the summer troll season is open. Chinook bycatch estimates calculated by the Pacific Salmon Commission are added into total mortality estimates for Chinook salmon when calculating annual catch and escapement data. Data collected from charter Saltwater Logbooks is used by ADF&G for regulation and the development and management of fisheries, for project evaluation, and for formulation of department policies and priorities that reflect angler needs, concerns, and preferences.

FMP Amendment

Fish tickets are the standardized methodology in place for reporting species that are subject to MRAs, but at-sea discards and bycatch in the East Area troll fishery are not currently required to be reported. Due to the minimal amount of at-sea discards or unreported bycatch, and measures to reduce bycatch including closed areas, seasonality, and gear selectivity, no additional reporting requirements are recommended. However, the FMP needs to be amended in order to explicitly identify the standardized methodology. The amendment could be added to Section 8.1.8 (Bycatch Management) of the FMP to identify the SBRM and explain how it meets the purpose of collecting, recording, and reporting bycatch.

3 Magnuson-Stevens Act and FMP Considerations

3.1. Section 303(a)(9) Fisheries Impact Statement

Section 303(a)(9) of the Magnuson-Stevens Act requires that a fishery impact statement be prepared for each FMP or 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 proposed action affects the BSAI Crab, Scallop, and Salmon FMPs, which are under the jurisdiction of the Council. The proposed action would add to or modify language in the FMPs to more transparently reflect and align with how bycatch is currently reported in the fisheries managed by the NPFMC. This action would not change how fisheries are managed, nor would it alter the way the fisheries operate. Due to the limited scope of the proposed action, the proposed action is not anticipated to impact: (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, nor (c) the safety of human life at sea. Based on the limited scope of the action, there is no need to update the Fishery Impact Statement included in the FMP.

3.2. Magnuson-Stevens Act National Standards

Below are the 10 National Standards as contained in the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), and a brief discussion of how the proposed action is consistent with the National Standards, where applicable. In recommending a preferred alternative, the Council must consider how to balance the national standards.

National Standard 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.

The proposed action makes no changes to current conservation and management measures. Bycatch reports provide crucial information utilized in stock assessments to evaluate the impact of bycatch mortality on fish stocks. These data are incorporated into overfishing limits and acceptable biological catch calculations, which are used to determine total allowable catch and optimum yield.

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

The proposed action makes no changes to current conservation and management measures. The Crab and Scallop Observer Programs collect bycatch information on the type of bycatch occurring on observed trips, which is then extrapolated to unobserved trips. Observer bycatch data in these fisheries are the best scientific information available and is used by Inseason Management to estimate the total amount of bycatch in the fisheries. In the commercial salmon troll fishery, reports on groundfish species subject to MRAs are the best scientific information available and utilized to develop management measures to minimize bycatch, such as determining the implementation of closed-water areas.

National Standard 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.

The proposed action makes no changes to the way fish stocks are managed. The bycatch reporting methodologies for crab, scallop, and salmon are each implemented as management units. This objective is achieved by delegating management of these fisheries as one unit throughout both state and federal waters to the State of Alaska.

National Standard 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.

The proposed action makes no changes to conservation and management measures. This proposed action also does not change or create allocations or assignments of fishing privileges. Bycatch reporting requirements in the crab, scallop, and salmon fisheries do not discriminate between residents of different states. Observers on crab CVs are assigned based on data needs and observers on scallop vessels inside the Cook Inlet Area are placed by ADF&G. Observers are placed on all crab CPs and scallop vessels outside of the Cook Inlet Area. Residency or corporation status does not influence how observers are placed and bycatch data are collected. In the commercial salmon troll fishery, bycatch reporting requirements for retained species pertains to all participants.

National Standard 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 State Senate, 1996).

The proposed action makes no changes to conservation and management measures. The analysis presents information relative to the feasibility and economic burdens associated with bycatch reporting methodologies.

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

The proposed action makes no changes to conservation and management measures. SBRMs do not need to be regionally or nationally standardized and they may vary from one fishery to another, accounting for variations among fisheries. The Council may include more than one data collection procedure in each of its SBRMs to further account for variations and contingencies in fisheries. Bycatch reporting methodologies must be flexible enough to allow timely responses to resource, industry, and other national and regional needs. Data collected from observer reports and/or fish tickets in the crab, scallop, and salmon fisheries enables inseason adjustments to be made in response to bycatch and harvest rates. Scallop observers report to ADF&G at a minimum of three times per week during the season.

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

The proposed action makes no changes to conservation and management measures. SBRMs will continue to impose the recordkeeping and reporting requirements in the crab, scallop, and salmon fisheries already in place. No changes to SBRMs would occur as a result of this action; rather, this action proposes modifying language in the FMPs to more clearly state the SBRMs currently in place. Additionally, should the Council recommend any new SBRMs, any such development would include consideration of feasibility, and would seek to minimize unnecessary burdens on the economy, on individuals, on private or public organizations, and on Federal, state, or local governments.

National Standard 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 proposed action makes no changes to conservation and management measures, and thus would not alter the way the fisheries operate. 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 crab, scallop, or salmon fisheries. The economic and social impacts of bycatch reporting requirements are minimal. Bycatch reporting does not create a substantial economic burden on fishery participants or communities, and the proposed action does not change any current reporting methods.

National Standard 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.

The purpose of a SBRM is to collect, record, and report bycatch data in a fishery that, in conjunction with other information, are used to assess the amount and type of bycatch occurring in the fishery and inform the development of conservation and management measures that, to the extent practicable, minimize bycatch and bycatch mortality. Methods used to collect, record, and report bycatch data in a fishery are connected to, but distinct from, the methods used to assess bycatch and the development of measures to minimize bycatch or bycatch mortality.

In this way, bycatch reporting methodologies do not attempt to minimize bycatch but may utilize bycatch information to minimize the mortality of such bycatch. In the crab fisheries, bycatch data are used in stock assessments to evaluate the impact of bycatch mortality which are incorporated into overfishing limits and acceptable biological catch calculations for BSAI crab stocks. In the scallop fishery, bycatch data may be utilized to make inseason adjustments to fishing seasons. In the salmon fishery, bycatch is minimized through seasonal closed areas and Chinook salmon mortality estimates are calculated post-season to ensure annual escapement goals and the Pacific Salmon Treaty obligations are met.

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

Bycatch reporting requirements do not change the flexibility of fishermen to decide when, where, and how to fish within established regulations. As no changes in reporting requirements nor changes in the operation of the fisheries are required as a result of the proposed action, increased risks to human life at sea are not expected as a result of this action.

3.3. Council's Ecosystem Vision Statement

In February 2014, the Council adopted, as Council policy, the following:

Ecosystem Approach for the North Pacific Fishery Management Council

Value Statement

The Gulf of Alaska, Bering Sea, and Aleutian Islands are some of the most biologically productive and unique marine ecosystems in the world, supporting globally significant populations of marine mammals, seabirds, fish, and shellfish. This region produces over half the nation's seafood and supports robust fishing communities, recreational fisheries, and a subsistence way of life. The Arctic ecosystem is a dynamic environment that is experiencing an unprecedented rate of loss of sea ice and other effects of climate change, resulting in elevated levels of risk and uncertainty. The North Pacific Fishery Management Council has an important stewardship responsibility for these resources, their productivity, and their sustainability for future generations.

Vision Statement

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 analyses of tradeoffs, accounts for changing conditions, and mitigates threats.

Implementation Strategy

The Council intends that fishery management explicitly take into account environmental variability and uncertainty, changes and trends in climate and oceanographic conditions, fluctuations in productivity for managed species and associated ecosystem components, such as habitats and non-managed species, and relationships between marine species. Implementation will be responsive to changes in the ecosystem and our understanding of those dynamics, incorporate the best available science (including local and traditional knowledge), and engage scientists, managers, and the public.

The vision statement shall be given effect through all of the Council's work, including long-term planning initiatives, fishery management actions, and science planning to support ecosystem-based fishery management.

The proposed action is consistent with the Council's Ecosystem Vision Statement. The proposed action would not modify how the crab, salmon, or scallop fisheries operate, as the proposed action consists of adding language to each of the FMPs to increase transparency in how the SBRM in each fishery is consistent with national guidance.

4 Preparers and Persons Consulted

Preparers:

Sara Cleaver, NPFMC
Angela Forristall, NPFMC/AK Sea Grant
Jennifer Mondragon, NMFS SFD
Doug Duncan, NMFS SFD

Persons Consulted/Reviewers:

Mike Fey, AKFIN
Alisha Falberg, NOAA GC
Phil Ganz, NMFS SFD
Joe Krieger, NMFS SFD
Jim Armstrong, NPFMC
Sally Bibb, NMFS SFD
Jason Gasper, NMFS SFD
Glenn Merrill, NMFS SFD
Jan Rumble, ADF&G
Elisa Russ, ADF&G
Krista Milani, NMFS SFD
Ben Daly, ADF&G
Bo Whiteside, ADF&G
Mark Stickert, ADF&G
Forrest Bowers, ADF&G
Karla Bush, ADF&G
Miranda Westphal, ADF&G
Ryan Burt, ADF&G

5 References

- Alaska Department of Fish and Game Shellfish Observer Program (ADF&G). 2020. Scallop Observer Training and Deployment Manual. Alaska Department of Fish and Game, Division of Commercial Fisheries, Kodiak.
- Alaska Department of Fish and Game. n.d. Weathervane Scallop Management and Research.
<http://www.adfg.alaska.gov/index.cfm?adfg=fishresearch.weathervanescallop>
- Bendock, T., & Alexandersdottir, M. 1990. Hook and Release Mortality of Chinook Salmon in the Kenai River Recreational Fishery. *ADFG Fishery Data Series No. 90-16*.
- Chilton, E.A., Swiney, K.M., Urban, J.D., Munk, J.E., & Foy, R.J. 2011. Ecosystem Consideration Indicators for Bering Sea and Aleutian Islands King and Tanner Crab Species. May 2011. Available at:
https://www.npfmc.org/wp-content/PDFdocuments/resources/SAFE/CrabSAFE/511Chapters/Ecosystem_CrabSAFE.pdf
- Crab Plan Team. 2020. Stock Assessment and Fishery Evaluation Report for the King and Tanner Crab Fisheries of the Bering Sea and Aleutian Islands Regions. North Pacific Fishery Management Council. Available at:
<https://meetings.npfmc.org/CommentReview/DownloadFile?p=23230f0c-a4c4-4530-ae12-efa09e5054be.pdf&fileName=C1%20BSAI%20Crab%20SAFE%20Intro.pdf>
- Doug, V.-L., Alexandersdottir, M., & McBride, D. 1993. Mortality of coho salmon caught and released using sport tackle in the Little Susitna River, Alaska. *Fisheries Research*, 15, 339-356.
- Glass, & Kruse. 2017. Spatiotemporal variability of benthic communities on weathervane scallop beds off Alaska. 9(1), 521-534.

- NMFS. 2004. Bering Sea Aleutian Islands Crab Fisheries Final Environmental Impact Statement. Available at:
https://repository.library.noaa.gov/view/noaa/19194/noaa_19194_DS1.pdf?download-document-submit=Download
- NMFS. 2011. Environmental Assessment for the Proposed Amendment 13 to the Fishery Management Plan for the Scallop Fishery Off Alaska. Retrieved from <https://repository.library.noaa.gov/view/noaa/18129>
- NPFMC. 2001. Environmental Assessment for Amendment 6 to the FMP for Salmon Fisheries off the Coast of Alaska to Revise Definitions of Overfishing. Retrieved from <https://repository.library.noaa.gov/view/noaa/18201>
- NPFMC. 2011a. Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs. Available at: <https://www.npfmc.org/wp-content/PDFdocuments/fmp/CrabFMPOct11.pdf>
- NPFMC. 2014. Fishery Management Plan for the Scallop Fishery Off Alaska. Available at: <https://www.npfmc.org/wp-content/PDFdocuments/fmp/Scallop/ScallopFMP2014.pdf>
- NPFMC. 2018. Fishery Management Plan for the Salmon Fisheries in the EEZ off Alaska. Retrieved from <https://www.npfmc.org/wp-content/PDFdocuments/fmp/Salmon/SalmonFMP.pdf>
- Pacific Salmon Commission. 2004. Joint Chinook Technical Committee Report - Estimation and Application of Incidental Fishing Mortality in Chinook Salmon Management. Retrieved from <https://www.psc.org/publications/technical-reports/technical-committee-reports/chinook/>
- Rosenkranz, G. E., and M. Spafard. 2014. Summary of observer data collected during the 2011/12 Alaska weathervane scallop fishery. Alaska Department of Fish and Game, Fishery Data Series No. 14-31, Anchorage.
- Salmon, M. 2016. ADF&G Shellfish Observer Program Test Fishery Account Annual Report to COOTF. Alaska Department of Fish and Game, Division of Commercial Fisheries, Dutch Harbor.
- Scallop Plan Team. 2020. Stock Assessment and Fishery Evaluation Report for the Scallop Fishery off Alaska. North Pacific Fishery Management Council. Available at: <https://www.npfmc.org/wp-content/PDFdocuments/resources/SAFE/ScallopSAFE/ScallopSAFE2020.pdf>
- Stone, R., Masuda, M., & Malecha, P. 2005. Effects of bottom trawling on soft-sediment epibenthic communities in the Gulf of Alaska. (P. B. Thomas, Ed.) 439-453.
- Stuby, L. (2002). An Investigation of How Catch-and-Release Mortality of Coho Salmon in the Unalakleet River Varies with Distance from Norton Sound. *ADF&G Fishery Data Series*. Retrieved from <http://www.adfg.alaska.gov/FedAidPDFs/fds02-26.pdf>