Responsible Fishery Management (RFM)

U.S. Alaska Bering Sea and Aleutian Islands King, Tanner, and Snow Crab Commercial Fisheries

Surveillance Report

Certification Body (CB):	**Global Trust Certification**
Assessment team:	Dr. Ivan Mateo, Lead Assessor Dr. Gerald P. Ennis, Assessor Dr. Wesley Toller, Assessor
Fishery client:	Bering Sea Crab Client Group
Assessment Type:	2nd Surveillance of the third cycle of certification
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Foreword

The Responsible Fisheries Management (RFM) Certification program is a third-party sustainable seafood certification program for wild capture fisheries owned by the Certified Seafood Collaborative (CSC), a 501(c)(3) non-profit foundation led by a diverse board of seafood and sustainability industry experts.

The program was previously owned by the Alaska Seafood Marketing Institute (ASMI) when it was known as the Alaska RFM program but when ownership passed to the CSC in July 2020 scope of the program was expanded to include other North American fisheries outside the State of Alaska.

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

1. Contents

1.1. List of Tables

2. Glossary

Acronym	Complete Name
AAC	Alaska Administrative Code
ABC	Allowable Biological Catch
ADFG	Alaska Department of Fish and Game
AFA	American Fisheries Act
AFSC	Alaska Fisheries Science Center
ASMI	Alaska Seafood Marketing Institute
AWT	Alaska Wildlife Troopers
BOF	Board of Fisheries
BSAI	Bering Sea and Aleutian Islands
BSFRF	Bering Sea Fisheries Research Foundation
CCRF	Code of Conduct for Responsible Fisheries
CCTF	Climate Change Task Force
CDQ	Community Development Quota
CFEC	Commercial Fisheries Entry Commission
CFR	Code of Federal Regulations
CPT	Crab Plan Team
CPUE	Catch per Unit Effort
CR	Crab Rationalization
CSC	Certified Seafood Collaborative
EBFM	Ecosystem-Based Fisheries Management
EIS	Environmental Impact Statement
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
ESA	Endangered Species Act
ESP	Ecosystem and Socioeconomic Profile
ETP	Endangered, Threatened and Protected
FAO	Food and Agriculture Organization of the United Nations
FEP	Fishery Ecosystem Plan
FMP	Fishery Management Plan
GOA	Gulf of Alaska
GHL	Guideline Harvest Level
HAPC	Habitat Area of Particular Concern
IFQ	Individual Fishing Quota
IPHC	International Pacific Halibut Commission
IRFA	Initial Regulatory Flexibility Analysis
IRIU	Improved Retention/Improved Utilization
LLP	License Limitation Program
MCS	Monitoring, Control and Surveillance
MMPA	Marine Mammal Protection Act
MSA	Magnuson-Stevens Fisheries Management and Conservation Act
MSE	Management Strategy Evaluation
mt	Metric tons

Acronym	Complete Name
MSY	Maximum Sustainable Yield
NC	Non-conformity
NEPA	National Environmental Policy Act
nm	Nautical miles
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOV	Notice of Violation
NPFMC	North Pacific Fishery Management Council
OFL	Overfishing Level
OLE	Office for Law Enforcement
OY	Optimum Yield
PSC	Prohibited Species Catch
RACE	Resource Assessment and Conservation Engineering
REFM	Resource Ecology and Fisheries Management
RFM	Responsible Fisheries Management
SAFE	Stock Assessment and Fishery Evaluation (Report)
SSC	Scientific and Statistical Committee
SSL	Steller Sea Lion
TAC	Total Allowable Catch
UFM	Unobserved Fishing Mortality
UOC	Unit of Certification
USCG	U.S. Coast Guard

3. Executive Summary

3.1. Brief intro and description of surveillance process

This Surveillance Report documents the 2nd surveillance assessment of the third cycle of certification for the U.S. Alaska Bering Sea and Aleutian Islands King and Snow crab commercial fisheries originally certified on April 16th, 2012, and the Eastern Bering Sea Tanner Crab and Aleutian Islands Golden King Crab fisheries that were certified on December 7th, 2017, and presents the recommendation of the Assessment Team for continued RFM Certification.

Unit of Certification

The U.S. Alaska Bering Sea and Aleutian Islands King, Tanner, and Snow crab commercial fisheries [Bristol Bay Red King crab (*Paralithodes camtschaticus*), St. Matthew Island Blue King crab (Paralithodes platypus), Eastern Bering Sea Tanner Crab (*Chionoecetes bairdi*), Aleutian Islands Golden King Crab (*Lithodes aequispinus*), and Eastern Bering Sea Snow crab (*Chionoecetes opilio*)] legally employing pot gear within Alaska jurisdiction (200 nautical miles EEZ) and subject to a federal [National Marine Fisheries Service (NMFS)/North Pacific Fishery Management Council (NPFMC)] and state [Alaska Department of Fish and Game (ADFG) & Board of Fisheries (BOF)] joint management regime. The UoCs are as described in Table 3.

This Surveillance Report documents the assessment results for the continued certification of the above fisheries to the RFM Certification Program. This is a voluntary program that has been supported by ASMI previously and now by Certified Seafood Collaborative foundation (CSC) who wish to provide an independent, third-party certification that can be used to verify that these fisheries are responsibly managed.

The assessment was conducted according to the Global Trust procedures for Alaska RFM Certification using the fundamental clauses of the RFM Conformance Criteria Version 2.1 (September 2020) in accordance with ISO 17065 accredited certification procedures.

The assessment is based on 6 major components of responsible management derived from the FAO Code of Conduct for Responsible Fisheries (1995) and Guidelines for the Eco-labelling of products from marine capture fisheries (2009); including:

Section A. The Fisheries Management System
Section B. Science and Stock Assessment Activities and The Precautionary Approach
Section C. Management Measures and Implementation, Monitoring and Control
Section D. Serious Impacts of the Fishery on the Ecosystem

These four major components are supported by 12 fundamental clauses (+ 1 in case of enhanced fisheries) that guide the RFM Certification Program surveillance assessment.

The surveillance process included a desktop review of relevant new documentary information including but not limited to: the most current fishery assessment and stock evaluation reports; Crab Plan Team reports and meeting minutes; Council publications; relevant scientific publications; ecosystem status reports; fishery management plans and amendments thereof; changes to state and federal regulations; fishery enforcement statistics; environmental impact statements; marine mammal stock assessments; and strategic plans (see Section 10 - References for a more complete listing of documents reviewed).

The surveillance process also included substantive meetings with representatives from each of the key fishery management agencies charged with management of the BSAI King, Tanner and Snow Crab commercial fisheries.

Assessment team meetings included: North Pacific Fishery Management Council (NPFMC); Alaska Department of Fish & Game (ADFG); Alaska Fisheries Science Center (Alaska FSC); and NOAA National Marine Fisheries Alaska Regional Office (NOAA Regional). The assessment team also met with the Bering Sea Crab Client Group (BSCCR) – fishery client and certificate holder. All meetings were held remotely via videoconferencing.

As described more fully in the following report sections, the assessment team did note some minor changes to the fishery management system. However, none of these changes were seen to undermine continued compliance of the fishery management system for BSAI King, Tanner and Snow Crab commercial fisheries with requirements of the RFM Standard. Progress in addressing non-conformities, as judged against defined milestones in client action plans, was judged to be adequate and on target.

A summary of the site meetings is presented in Section 6. Assessors included both externally contracted fishery experts and Global Trust internal staff.

3.2. Summary of main findings

The Audit team has determined that the AK BSAI Crab commercial fishery operated within the defined Alaskan UoC remained in compliance with the RFM Fishery Standard's Fundamental Clauses for the Fisheries Management System component (Clauses 1, 2, 3), Science and Stock Assessment Activities and The Precautionary Approach (Clauses 4, 5, 6, 7), Management Measures and Implementation Monitoring and Control component (Clauses 8, 9, 10, 11), and Ecosystem Impact (Clause 12).

3.3. Recommendation with respect to continuing certification

Following this 2nd Surveillance Assessment of the second recertification cycle, the assessment team recommends that continued certification under the Responsible Fisheries Management Certification Program is maintained for the management system of the applicant fisheries, the U.S. Alaska Bering Sea and Aleutian Islands King, Tanner, and Snow crab commercial fisheries [Bristol Bay Red King crab (*Paralithodes camtschaticus*), St. Matthew Island Blue King crab (*Paralithodes platypus*), Eastern Bering Sea Tanner Crab (*Chionoecetes bairdi*), Aleutian Islands Golden King Crab (*Lithodes aequispinus*), and Eastern Bering Sea Snow crab (*Chionoecetes opilio*)] legally employing pot gear within Alaska jurisdiction (200 nautical miles EEZ) and subject to a federal [National Marine Fisheries Service (NMFS)/North Pacific Fishery Management Council (NPFMC)] and state [Alaska Department of Fish and Game (ADFG) & Board of Fisheries (BOF)] joint management regime.

3.4. Assessment Team Details

The Assessment Team for this assessment was as follows; further details are provided in **Appendix 1**:

Dr. Ivan Mateo – Lead Assessor, responsible for RFM Fundamental Clauses 1, 2, 3, 9, 10, and 11.
Dr. Gerald P. Ennis – Assessor 1, , responsible for RFM Fundamental Clauses 4, 5, 6, 7, and 8.
Dr. Wesley Toller – Assessor 2, responsible for RFM Fundamental Clause 12.

3.5. Details of Applicable RFM Documents

This assessment was conducted according to the relevant program documents outlined in Table 1. below.

Table 1. Relevant RFM program documents including applicable versions.		
Document Title	**Version Number, Issue Date**	**Usage**
RFM Procedure 2: Application to Certification Procedures for the RFM Fishery Standard.	Version 6, September 2020	Process
Responsible Fisheries Management Certification Program Fisheries Standard.	Version 2.1, September 2020	Standard
Responsible Fisheries Management Certification Program Guidance to Performance Evaluation for the Certification of Wild Capture and Enhanced Fisheries in North America.	Version 2.1, January 2021	Guidance to Standard

4. Client contact details

Table 2. Client details and key contact information.		
Applicant Information		
Organization/Company Name:		Bering Sea Crab Client Group
Address:	Street:	23929 22nd Drive SE, Bothell
	City:	Seattle
	State:	Washington
	Country:	USA
	Zip code	98199
Applicant Key Contact Information		
Name:		Scott Goodman
Position:		General Manager
E-mail:		sgoodman@nrccorp.com

5. Units of Certification

5.1. Units of Certification

The Units of Certification (i.e., what is covered by the certificate) are as described in Table 3.

Table 3. Units of Certification.

Unit of Certification 1 of 5		
Species:	Common name:	Red King crab
	Latin name:	*Paralithodes camtschaticus*
Stock(s):		Bristol Bay Red King crab
Geographical area:		U.S. Federal and State waters off the U.S. State of Alaska
Fishing gear/method:		Baited pot/trap gears
Client group:		Bering Sea Crab Client Group LLC
Unit of Certification 2 of 5		
Species:	Common name:	Snow crab
	Latin name:	*Chionoecetes opilio*
Stock(s):		Eastern Bering Sea Snow crab
Geographical area:		U.S. Federal and State waters off the U.S. State of Alaska
Fishing gear/method:		Baited pot/trap gears
Client group:		Bering Sea Crab Client Group LLC
Unit of Certification 3 of 5		
Species:	Common name:	Blue King crab
	Latin name:	*Paralithodes platypus*
Stock(s):		St. Matthew Island Blue King crab
Geographical area:		U.S. Federal and State waters off the U.S. State of Alaska
Fishing gear/method:		Baited pot/trap gears
Client group:		Bering Sea Crab Client Group LLC
Unit of Certification 4 of 5		
Species:	Common name:	Tanner crab
	Latin name:	*Chionoecetes bairdi*
Stock(s):		Eastern Bering Sea Tanner crab
Geographical area:		U.S. Federal and State waters off the U.S. State of Alaska
Fishing gear/method:		Baited pot/trap gears
Client group:		Bering Sea Crab Client Group LLC
Unit of Certification 5 of 5		
Species:	Common name:	Golden King crab
	Latin name:	*Lithodes aequispinus*
Stock(s):		Aleutian Islands Golden King crab
Geographical area:		U.S. Federal and State waters off the U.S. State of Alaska
Fishing gear/method:		Baited pot/trap gears
Client group:		Bering Sea Crab Client Group LLC
Management system: (all Units of Certification)		U.S. Federal and State fisheries within the Gulf of Alaska and the Bering Sea & Aleutian Islands managed by: - National Marine Fisheries Service (NMFS) - North Pacific Fishery Management Council (NPFMC) - Alaska Department of Fish and Game (ADFG) - Alaska Board of Fisheries (BOF)

5.2. Changes to the Units of Certification

The assessment team confirmed that there were no changes to the Units of Certification.

6. Summary of site visits and/or consultation meetings

Desktop reviews are the preferred assessment vehicle within the RFM program. In general, on-site/off-site audits are required only if the Certification Body deems that a desktop review may be inadequate for determining whether the fishery is continuing to comply with the RFM Fishery Standard, based on the performance of the fishery, status of non-conformances and related corrective actions.

Table 4. Summary of site visits and/or consultation meetings.

Meeting Date and Location	Personnel	Areas of discussion
Date: 11/26/2024 Location: Remote (video call)	Bering Sea Crab Client Group: Scott Goodman Assessment Team Members: Dr. Ivan Mateo, Lead Assessor Dr. Jerry Ennis, Assessor Dr. Wes Toller, Assessor	Topics Discussed: • Changes to management measures for crab stocks. • Regulatory or policy changes affecting the management of crab stocks or fishing operations. • Updates on the status of crab stocks. • Rebuilding prospects for SMBKC, BBRKC and EBSSC. • Long-term outlook for change in underlying environmental/ecological factors that favor rebuilding. • Update on trends for lost fishing gear and use of bait. • Status update for CAP for NC#1 – SMBKC. • Status update for CAP for NC#3 – AIGKC habitat. • Status update for CAP for NC#4 – EBSSC.
Date: 11/26/2024 Location: Remote (video call)	North Pacific Fishery Management Council: Dave Witherell, Anita Kroska, Taylor Homan, Diana Evans Assessment Team Members: Dr. Ivan Mateo, Lead Assessor Dr. Jerry Ennis, Assessor Dr. Wes Toller, Assessor	Topics Discussed: • Significant changes or updates to the crab FMP. • Challenges confronting the Crab Plan Team. • Updates on the status of crab stocks. • Rebuilding prospects for SMBKC, BBRKC and EBSSC • Long-term outlook for change in underlying environmental/ecological factors that favor rebuilding. • SAFE report for AIGKC, 2023. • Changes in crab fishery effects on the ecosystem • EBFM and impact of climate change on crab stocks • Status of EFH five-year review. • Unobserved fishing mortality (UFM).
Date: 11/27/2024 Location: Remote (video call)	Alaska Department of Fish and Game: Forrest Bowers, Ethan Nichols, Katie Palof Assessment Team Members: Dr. Ivan Mateo, Lead Assessor	Topics Discussed: • Changes to management measures for crab stocks. • Regulatory or policy changes affecting the management of crab stocks or fishing operations. • Changes in decision-making processes for crab fisheries. • Updates on the status of crab stocks.

Meeting Date and Location	Personnel	Areas of discussion
	Dr. Jerry Ennis, Assessor Dr. Wes Toller, Assessor	• Rebuilding prospects for SMBKC, BBRKC and EBSSC • Long-term outlook for change in underlying environmental/ecological factors that favor rebuilding. • Changes in crab fishery effects on the ecosystem. • Impact of climate change on crab stocks. • Fishery interactions with non-target species, seabirds, ETP species, habitats, and the food web. • Update on trends for lost fishing gear and use of bait. • New info on habitats or from AI habitat surveys.
Date: 12/3/2024 Location: Remote (video call)	Alaska Fisheries Science Center: William Stockhausen, Cody Szuwalski, Melissa Haltauch Assessment Team Members: Dr. Ivan Mateo, Lead Assessor Dr. Jerry Ennis, Assessor Dr. Wes Toller, Assessor	Topics Discussed: • Regulatory or policy changes affecting the management of crab stocks or fishing operations. • Updates on the status of snow and tanner crab stocks. • Long-term outlook for change in underlying environmental/ecological factors that favor rebuilding. • Resilience of small snow crab to marine heat waves. • Use of ecosystem information in stock assessments. • Introduction of risk tables for setting buffers. • Changes in crab fishery effects on the ecosystem. • Impact of climate change on crab stocks. • EBSSC mass mortality.
Date: 12/10/2024 Location: Remote (video call)	NOAA Alaska Regional Office: Andrew Olson, Krista Milani, Molly Zaleski Assessment Team Members: Dr. Ivan Mateo, Lead Assessor Dr. Jerry Ennis, Assessor Dr. Wes Toller, Assessor	Topics Discussed: • Changes to management measures for crab stocks. • Regulatory or policy changes affecting the management of crab stocks or fishing operations. • Changes in decision-making processes for crab fisheries. • Long-term outlook for change in underlying environmental/ecological factors that favor rebuilding. • Fishery interactions with non-target species, seabirds, ETP species, habitats, and the food web. • New info on habitats or from AI habitat surveys.
Date: 12/11/2024	Closing meeting, Bering Sea Crab Client Group: Scott Goodman	Topics Discussed: • Findings from the surveillance audit • Progress against corrective action plans

Meeting Date and Location	Personnel	Areas of discussion
Location: Remote (video call)	Assessment Team Members: Dr. Ivan Mateo, Lead Assessor Dr. Jerry Ennis, Assessor Dr. Wes Toller, Assessor	• Updates to corrective action plans • Timeline for completion of surveillance report

7. Summary findings

Surveillance audits are summary audits intended to evaluate continued compliance with the RFM Fishery Standard. Each aspect of the fishery they are intended to focus on is addressed below.

7.1. Update on topics that trigger immediate failure

The following fisheries management issues cause a fishery to immediately fail RFM assessment:

- Dynamiting, poisoning, and other comparable destructive fishing practices.
- Significant illegal, unreported, and unregulated (IUU) fishing activities in the country jurisdiction.
- Shark finning.
- Slavery and slave labor on board fishing vessels.
- Any significant lack of compliance with the requirements of an international fisheries agreement to which the U.S. is signatory. A fishery will have to be formally cited by the International Governing body that has competence with the international Treaty in question, and that the US has been notified of that citation of non-compliance.

The Assessment Team has, as part of this surveillance, carried out a review of any new evidence with respect to these issues and found no evidence that any of the above issues are occurring/describe any issues identified and the consequences for the fishery.

7.2. Changes in the management regime and processes

There were no changes in the management regime or its processes that would affect the outcome of certification or that have potential to change the effect of the fishery on resources.

7.3. Changes to the organizational responsibility of the main management agencies

There were no changes to organizational responsibilities of the main management agencies that constitute the fishery management framework.

7.4. New information on the status of stocks

Eastern Bering Sea Crab

Total allowable catches were reduced with the collapse of the population in 2021. The fishery was closed for the first time in 2022 and the closure continued through 2023. Discard mortality from the directed fishery is the next largest source of mortality after retained catch and approximately tracks the retained catch. There was no discard mortality in 2023 because there was no directed fishery. Non-directed mortality continues to be very small at 0.07 kt in 2024.

The stock was declared overfished in 1999 in response to the total mature biomass dropping below the 1999 minimum stock size threshold. MMB in that year decreased to 95.85 kt. Observed MMB slowly increased after 1999, and the stock was declared rebuilt in 2011 when estimated MMB at mating was above B35%. However, recently the observed MMB has declined to historical lows and the stock was declared overfished again in 2021. MMB at the time of the survey was 63.04 kt in 2024.

A large year class recruited to the survey gear in the mid-2010s and was tracked until 2018 and 2019 but disappeared from the eastern Bering Sea shelf before reaching commercial size. After this recent collapse, some sign of small crab has been observed in the survey and this year's (2024) observed immature female biomass in the survey was the highest on record.

The author-preferred OFL for 2024 was 0.66 kt fishing at FOFL = 0.05. This OFL was based on a tier 4 sloped harvest control rule that uses the survey estimates of >101 mm carapace width crab as biomass, the average of survey estimates of >101mm carapace width crab from 1982-2023 as a proxy for BMSY, and natural mortality as a proxy for FMSY. The tier 3 harvest control rules were not recommended because the status quo reference points are too aggressive, and the modification suggested by the CPT was too conservative. Using natural mortality as a proxy for FMSY within the GMACS model is not straight-forward because the total fishery selectivity curve is shifted to the right of industry-preferred males. Even if a fishing mortality rate equivalent to natural mortality was identified the assessment model exhibited a lack of fit to large males and convergence problems. The ABC for the author-recommended model was 0.04 kt, calculated by subtracting a 20 % buffer from the OFL.

However, the CPT recommended model 24.1b for use in specifying the 2024/25 OFL and ABC (Table 5).

Table 5. Metrics used in designation of status and OFL (1,000 t). Status represents the status of the population after the completed fishing year and is used for overfished declarations. 'Years' indicates the year range used in the calculation of the proxy for BMSY. 'M' is the natural mortality for mature male crab. MMB here refers to functionally mature biomass (Source: NPFMC 2024 BSAI SAFE).

Year	Tier	BMSY	MMB	Status	Proj_MMB	Proj_Status	FOFL
2024/25	3c	94.8	13.4	0.14	11.28	0.14	0

Years	M
1982-2023	0.28

The SSC identified that the choice of reference points should be considered in two parts: the first focusing on accurately describing the biology of the species and the size of males important for mating and the second reflecting the appropriate harvest rate to provide for reproduction and fishery yield[1]. Noting the uncertainty in mating dynamics, the SSC disagreed with the author and CPT and instead recommended using the Tier 3 model 24.1a, with F35% and B35% as proxies for MSY to set the OFL.

The SSC further recommended a buffer of 65% between the OFL and ABC, reflecting the potential for very high fishing mortality rates on larger crab if the full OFL were removed from the stock. This buffer is larger than last year, and the SSC based the increase on uncertainty in the reproductive capacity of small males, continued concern over issues with the Tier 3 model, the recent large mortality event from which the stock has yet to recover, and the potential for persistent truncation of the size/age structure of male crab. The SSC noted that the use of such a large buffer is a temporary solution, pending additional biological and assessment research.

Based on the SSC recommended model, overfishing is not occurring for snow crab, and the stock is not currently overfished (MMB is above the minimum stock size threshold) but will remain under a rebuilding plan until it has rebuilt to the BMSY level.

[1]https://meetings.npfmc.org/CommentReview/DownloadFile?p=69333502-2018-4837-a177-8defa28ddae4.pdf&fileName=SSC%20Report%20Oct%202024_FINAL.pdf

Accordingly, after two consecutive closed seasons (2022-23 and 2023-24), the fishery was re-opened for the 2024-25 season with a small TAC of 2,140 t which is in accordance with the ADFG Guideline Harvest Level (GHL) that is based on estimated total mature biomass.

Saint Matthew Island Blue King Crab

The peak historical catch from the Saint Matthew Island blue king crab stock was 4,288 t in 1983-84[2]. The fishery was closed for 10 years after the stock was declared overfished in 1999, for 3 years in 2010 and again in 2013. Retained catches in the most recent directed fisheries were 140 t in 2014-15 and 48 t in 2015-16. The fishery has remained closed since 2016/17.

The 2024 NMFS trawl survey biomass estimate is not comparable to the time series typically used for this assessment because the 2024 survey excluded the corner stations that have been sampled since 1983, and therefore some decrease in biomass is expected. Mean biomass for 1983-2023 with corner stations excluded is only 79% of the mean biomass for the same time period with corner stations included. Using the 1978-2024 time series without corner stations, the 2024 NMFS trawl survey biomass of ≥ 90 mm carapace length (CL) male crab is 1,833 t, which is 41% of the time series mean, and a 3% increase from the 2023 biomass. The mean NMFS survey biomass over the most recent three years is 35% of the time series mean, indicating a low biomass compared to historical survey estimates.

Recruitment is based on the estimated number of male crab in the 90-104 mm carapace length CL) size class in each year. Using the NMFS trawl survey time series with corner stations excluded, the 2024 trawl survey area-swept estimate of 252,145 male SMBKC in this size class is ranked 36th, near the lower end of the 47 years of the survey, and down from 30th in 2023. Mean recruitment over the most recent six years (2018 - 2024) is 46% of the long-term mean.

Estimated mature-male biomass (MMB) on 15 February is used as the measure of biomass for this Tier 4 stock, with males measuring ≥ 105 mm CL considered mature. The BMSY proxy is obtained by averaging estimated MMB over the full assessment time frame (1978-2023). The SSC chose model 24.1 results as the basis for OFL determination[3].

It estimates mature male biomass in 2023/24 below the MSST, indicating that the stock remains overfished. A directed fishery closure has been in place since the 2016/17 season and estimated total bycatch has remained well below the overfishing level (OFL), hence overfishing has not occurred. Computations which indicate the relative impact of fishing suggest that the current spawning stock biomass has been reduced to 87% of what it would have been in the absence of fishing, assuming the same level of recruitment as estimated.

However, MMB/MMBMSY has increased from 0.31 (2019-20) to 0.47 (2023-24) and is projected to be 0.52, just above the MSST, for 2024-25

Bristol Bay Red King Crab

Catches of Bristol Bay red king crab have been on a declining trend since 2014 following a steady decline in total allowable catch (TAC) from 2016. The retained catch in 2020-21 was 1,257 t, which was followed by closure of the directed pot fishery for the 2021-22 and 2022-23 seasons due to low mature female abundance, in accordance

[2] https://meetings.npfmc.org/CommentReview/DownloadFile?p=9bd6e314-99e4-47b8-a7a4-e306c8c6a19e.pdf&fileName=SMBKC%20SAFE%202024.pdf
[3] https://meetings.npfmc.org/CommentReview/DownloadFile?p=69333502-2018-4837-a177-8defa28ddae4.pdf&fileName=SSC%20Report%20Oct%202024_FINAL.pdf

with the State of Alaska harvest strategy. The fishery reopened in 2023-24 with a retained catch of 960 t. The magnitude of bycatch from groundfish trawl and fixed gear fisheries has been stable and small relative to stock abundance during the last 10 years[4].

Estimated mature abundance appears to be increasing slowly in the last few years. The projected mature male survey biomass in 2024 is approximately 51.4% of the estimated mean survey biomass for the entire time series, which includes many periods of low biomass throughout history. The estimated mature female survey biomass was low from 2018 to 2022, but the 2024 estimated value increased to approximately 46.9% of the mean.

Estimated recruitment has been extremely low during the last 14 years, and even lower during the recent nine years. With the low recruitment in recent years, the projected mature biomass is expected to decline during the next few years with a below-average fishing mortality of 0.167 to 0.25 per year.

The stock was above Minimum Stock Size Threshold (MSST) in 2023/24 (99% of BMSY) and hence was not overfished. Since total catch was below the OFL (overfishing limit), overfishing did not occur. The projection using the lowest recruitment periods during 2013-2023 would not likely result in “approaching an overfished condition” based on the current harvest strategy. The fishery opened for the 2024-25 season with a 1,048 t TAC from an ABC of 4,020 t.

The last strong cohort for the stock hatched in the year 2000. However, no additional strong cohorts have been observed in the survey through the 2010s or 2020s. The near future outlook for the Bristol Bay RKC stock ranges from a steady state to a declining trend. Without favorable environmental conditions, recovery to the high levels of the late 1970s is unlikely in the near future.

Eastern Bering Sea Tanner Crab

The ADFG sets the eastern Bering Sea tanner crab TAC separately for areas east and west of 166o W longitude. From 2014-15, the stock has remained above its Tier 3 MSST and has not been considered overfished by federal standards. ABCs have ranged from ~17,000 t to ~27,000 t and none have constrained fishery TACs. However, ADFG has closed the directed fishery in the eastern area 6 times since the 2015-16 season and 2 times in the western region based on harvest strategies with criteria incorporating stock size thresholds for females as well as males.

Since 2013-14, harvests reached a maximum of ~8,900 t in 2015-16, but have subsequently been less than 1,200 t. During this period total catch mortality peaked in 2015-16 as well (~12,000 t) but has been less than (~2,000 t) since then.

For 2023-24, the OFL was 36,200 t and the ABC was 27,150 t. The TAC in the eastern region was 344.7 t and 598.7 t in the western region. Total retained catch was 940.3 t and total fishing mortality was estimated directly from observer data by applying gear-specific handling mortality rates to be 1,086 t.

In general, the stock has fluctuated on a decadal scale imposed on a declining trend since the beginning of the annual NMFS survey in 1975. Since 2010, maximum survey biomass for males occurred in 2014 at 108,900 t, for females in 2024 at 43,760 t, and for industry-preferred males (> 125 mm CW) in 2014 at 35,980 t. Average survey biomass over the past 5 years was 44,780 t for males, 20,400 t for females, and 7,075 t for industry- preferred

[4] https://meetings.npfmc.org/CommentReview/DownloadFile?p=7b8e95ba-6182-4a34-b141-92b0f13f5a07.pdf&fileName=BBRKC%20SAFE%202024.pdf

males. In 2024, survey biomass was 83,410 t for males, 43,760 t for females, and 11,510 t for industry-preferred males[5].

Spawning stock biomass is expressed as mature male biomass (MMB) at the time of mating (mid-February), which is a model-estimated quantity. From the author's preferred model (22.03d5), estimated MMB for 2023-24 was 88,210 t. The most recent peak in MMB occurred in 2014-15 at 117,200 t. MMB approached the very low levels seen in the mid-1990s to early 2000s in 2020-21 at 50,860 t but has increased over the past two years.

Annual recruitment, the number of small crab (≥ 25 mm CW) entering the population at the beginning of the crab year (July 1), is a model-estimated quantity. From the author's preferred model (22.03d5), estimated total recruitment has increased since 2014, when recruitment reached its lowest level (95 million) since 2011. Average recruitment over the 2014-2023 period was 736 million crabs, well above the long-term (1982-2023) mean of 556 million crabs. For 2024, estimated recruitment is 431 million crabs, which is substantially less than the estimate for the previous year (1,768 million) and below the long-term mean. However, estimates of recruitment in the final model year are generally not well-estimated.

BMSY for this stock is 40,010 t, therefore MSST is 20,000 t. Because current MMB (88,210 t) > MSST, the stock is not overfished. Estimated total catch mortality was 1,086 t, which was less than the OFL for 2023-24 (36,200 t); consequently, overfishing did not occur. The fishery opened for the 2024-25 season with a 2,844 t TAC (2,041 t west and 803 t east of 166 o) from an ABC of 33,030 t.

Multi-year projections made for a range of fishing mortality scenarios indicate MMB initially decreasing in the first 5 years as fishery-vulnerable larger crab in the terminal year are fished out before the 2021 and 2022 cohorts start to grow into the fishery-vulnerable size range.

Aleutian Islands Golden King Crab

The fishery has been managed separately east (EAG) and west (WAG) of 174◦ W longitude since 1996/97. The management specification changed from GHL to TAC in 2005-06. Over the recent years of the fishery, TACs have increased from 1,501 t to 1,955 t between 2016-17 and 2019-20 in the EAG and from 1,014 t to 1,302 t in the WAG. For the 2023-24 season, the TAC was 1,687 t in the EAG and 821 t in the WAG, with 1,758 t and 820 t of retained catch, respectively[6].

Total catch mortality includes retained catch, discard mortality in the directed fishery, and bycatch mortality in groundfish fixed gear and trawl fisheries. Directed fishery discard mortality and groundfish fishery bycatch have remained low and stable in recent history, with the exception of several pulses in groundfish bycatch during 2016 and 2020 in the EAG and 2022 in the WAG. Although CPUE for the two areas showed similar trends through 2010-11, they have since diverged (increasing for the EAG and decreasing for the WAG). CPUE in 2023-24 was 38 crab / pot in the EAG (near time series high) and 13 crab / pot in the WAG (near, post-rationalization low).

Estimated mature male biomass (MMB) steadily increased starting in 1995 (in both areas) to a peak during the early (EAG) to mid (WAG) 2000s. Since then, estimated MMB has remained somewhat stationary in the EAG, though undergoing a dip from about 2011 - 2020. MMB in the EAG has slightly decreased since 2021 but remains

[5]https://meetings.npfmc.org/CommentReview/DownloadFile?p=4be0d944-87ac-48f6-8983-99dce7d52583.pdf&fileName=Tanner%20Crab%20SAFE.pdf
[6]https://meetings.npfmc.org/CommentReview/DownloadFile?p=a74445e6-933f-462e-84b5-313a4eb6798d.pdf&fileName=C2%20AIGKC%20Safe%20Chapter.pdf

relatively high for the time series. MMB in the WAG has steadily decreased since 2008, with a small increase from 2014 - 2017. The most recent several seasons suggest another small increasing trend in the WAG since 2021.

Estimated recruitment has remained stationary in the EAG and has undergone a decreasing trend in the WAG since the 1980s. All model scenarios estimated increasing recruitment during the last several years. Terminal year recruitment was estimated to be 98% and 97% of the time series average in the EAG and WAG, respectively for the author preferred model (23.1).

AIGKC has been managed as a Tier 3 stock since 2017. Biological reference points computed for EAG and WAG separately are summed for the full stock prior to stock status determination. The stock was above Minimum Stock Size Threshold (MMST = 50% of B35%) in 2023-24, and thus was not overfished, nor has ever been overfished at any point in its history. Nor did overfishing occur in 2023-24; total fishing mortality (2,755 t) was below the overfishing limit (4,182 t). Estimated fully selected fishing mortality (F) and MMB relative to fishing mortality and biomass targets suggest fishery management has been conservative in recent history in the EAG, and somewhat aggressive in the WAG. Based on all model scenarios, estimated F exceeded the FOFL control rule in 2020-21 to 2022-23. The fishery opened for the 2024-25 season with an overall 2,214 t TAC (1,706 in EAG and 508 t in WAG) from an ABC of 2,794 t.

7.5. Update on fishery catches

The following tables that include recent catches in the BSAI crab fisheries under consideration are from the introduction to the 2024 SAFE report[7].

Table 6. Status and catch specifications (1000 t) for snow crab. Shaded values are new estimates or projections based on the current assessment. Other table entries are based on historical assessments and are not updated except for total and retained catch (Source: BSAI Crab SAFE, 2024).

Year	MSST	Biomass (MMB)	TAC	Retained Catch	Total Catch	OFL	ABC
2020/21	76.7	26.7	20.4	20.4	26.2	95.4	71.6
2021/22	91.6	41.3	2.5	2.5	3.6	7.5	5.6
2022/23	136.9	92.4	Closed	0	0.05	10.3	7.7
2023/24	47.41*	13.4*	Closed	0	0.07	15.4	7.7
2024/25		11.3*				0.05*	0.04*

[7] https://meetings.npfmc.org/CommentReview/DownloadFile?p=16285ec6-4621-44ff-a06d-c15563ac9510.pdf&fileName=C1%20BSAI%20Crab%20Introduction.pdf

Table 7. Status and catch specifications (1000 t) for Bristol Bay red king crab. Shaded values are new estimates or projections based on the current assessment. Other table entries are based on historical assessments and are not updated except for total and retained catch (Source: BSAI Crab SAFE, 2024).

Year	MSST	Biomass (MMB)	TAC	Retained Catch	Total Catch	OFL	ABC
2020/21	12.12	13.96	1.20	1.26	1.57	2.14	1.61
2021/22	12.01	16.64	0	0.02	0.10	2.23	1.78
2022/23	9.68	18.34	0	0.02	0.07	3.04	2.43
2023/24	9.35	18.65	0.975	0.96	1.34	4.42	3.54
2024/25		15.43				5.02	4.02

Table 8. Status and catch specifications (1000 t) for Tanner crab. Shaded values are new estimates or projections based on the current assessment. Other table entries are based on historical assessments and are not updated except for total and retained catch (Source: BSAI Crab SAFE, 2024).

Year	MSST	Biomass (MMB)	TAC	Retained Catch	Total Catch	OFL	ABC
2020/21	17.97	56.34	1.07	0.66	0.96	21.13	16.90
2021/22	17.37	62.05	0.50	0.49	0.78	27.17	21.74
2022/23	18.19	74.17	0.91	0.91	1.19	32.81	26.25
2023/24	20.00	88.21	0.94	0.94	1.09	36.20	28.96
2024/25		56.05				41.29	33.03

Table 9. Historical status and catch specifications for St. Matthew Island blue king crab (kt). Shaded values are new estimates or projections based on the current assessment. Other table entries are based on historical assessments and are not updated except for total and retained catch. Source: (BSAI Crab SAFE, 2024)

Year	MSST	Biomass (MMB)	TAC	Retained Catch	Total Catch	OFL	ABC
2020/21	1.65	1.14	0.00	0.00	0.001	0.05	0.04
2021/22	1.63	1.18	0.00	0.00	0.001	0.05	0.04
2022/23	1.50	1.31	0.00	0.00	0.001	0.066	0.050
2023/24	1.48	1.41	0.00	0.00	0.005	0.066	0.050
2024/25		1.53				0.129	0.097
2025/26		1.53				0.129	0.097

Table 10. Status and catch specifications (1000 t) for Aleutian Islands golden king crab. Shaded values are new estimates or projections based on the current assessment. Other table entries are based on historical assessments and are not updated except for total and retained catch (Source: BSAI Crab SAFE, 2024).

Year	MSST	Biomass (MMB)	TAC	Retained Catch	Total Catch	OFL	ABC
2020/21	6.026	16.207	2.999	3.000	3.444	4.798	3.599
2021/22	5.859	12.592	2.690	2.699	3.056	4.817	3.372
2022/23	5.832	13.600	2.291	2.369	2.612	3.761	2.821
2023/24	5.772	12.716	2,508	2,578	2.761[a]	4.182	3.137
2024/25		11.388				3,725	2,794

7.6. Significant changes in the ecosystem effects of the fishery

Surveillance audit results indicate that there were no significant changes in the ecosystem effects of the fishery (e.g., no major changes in bycatch, discards, ETP species interactions, gear habitat interactions). The evidence viewed by the assessment team confirms that the certified BSAI king and Tanner crab fisheries remain in conformity with RFM Fundamental Clause 12. There is in place a robust fisheries management system that appropriately and adequately considers fishery interactions and effects on the ecosystem (NPFMC, 2011). The BSAI crab fishery management system is based on the best available science while allowing for inputs from fishery participants and other stakeholders including the provision of local and/or traditional knowledge. The management system also incorporates risk-based approaches for determining the most probable adverse impacts of the fishery so that potentially adverse impacts of the fishery on the ecosystem are appropriately assessed and effectively addressed. Habitat protection areas, prohibited species catch (PSC) limits, and crab bycatch limits, are in place to protect important benthic habitat for crab and other resources and to reduce crab bycatch in the trawl and fixed gear groundfish fisheries. If PSC limits are reached in bottom trawl fisheries executed in specific areas, those fisheries are closed. The crab fisheries catch a small quantity of other species as bycatch. A limited number of groundfish, such as Pacific cod, Pacific halibut, and yellowfin sole are caught in the directed pot fishery as well as small amounts of invertebrates (gastropods and echinoderms). Such interactions are appropriately assessed and effectively addressed.

7.7. Violations and enforcement information

On November 18, 2024, we received a communication from LCDR Jed Raskie, USCG D17 Domestic Fisheries Enforcement Section Chief USCG describing the enforcement activities for CY 2023 and CY 2024.

Table 11. Number of Boardings from CY2023 and CY2024 (Source: USCG).

	Fishery	CY23 Boardings	CY24 Boardings
1	East Bering Sea Snow Crab	0	0
2	Bristol Bay Red King Crab	0	8
3	St. Mathew Island Blue King Crab	0	0
4	Tanner Crab	6	0
5	AI Golden King Crab	0	2

"*None of these boardings had fishery or safety violations. The overall level of compliance was HIGH. USCG did not observe or receive reports of gear loss.*

The only potential issue that was observed was that one of the AI Golden King Crab vessels set pots in a closed area. When the vessel went back to retrieve those pots (with a different captain onboard), the new captain released any crab caught in those pots that were set within the closed area. This information was relayed to the boarding team and verified on the catch logs when the boarding team investigated the potential violation".

On November 7, 2024, we received a letter from Captain Derek DeGraaf, Southern Detachment Commander for Alaska Wildlife Troopers regarding the Alaska Wildlife Troopers (AWT) enforcement efforts during Bering crab fisheries for 2023-2024.

"*AWT continues to keep both an at-sea and dockside presence during most of this fishery, when the season is open. Fishermen participating in the fishery are checked to confirm they are properly permitted and licensed, fishing in the appropriate area and not exceeding quota limits set by the Alaska Department Fish and Game (ADF&G). Dockside inspections are conducted by AWT in ports where product is being delivered. AWT will inspect permits and licenses, product being delivered, and confirm the location the fishing occurred. Further AWT confirms product is properly being documented on the required fish ticket.*

Here is the information you requested:

1. *East Bering Sea Snow Crab-. This fishery was closed for the 2023-2024 season.*
2. *Bristol Bay Red King Crab- 14 vessels were boarded, 82 pots were inspected, and 43 commercial fishermen were contacted. Two federal violations were observed and forwarded to NMFS for no federal crab vessel permit, and for fishing without operation VMS.*
3. *St. Mathew Island Blue King Crab- This fishery was closed for the 2023-2024 season.*
4. *Bering Sea Tanner- No patrols/no gear inspected.*
5. *Aleutian Island Golden King Crab- No patrols/ no gear inspected. Dockside boardings conducted of all vessels involved (usually just three or four registered for this fishery). There was one case for the illegal sale of Golden King Crab by two crewmembers.*

Overall, AWT believe there to be a high level of compliance with regulations in these fisheries. With rationalization and the significant fleet reduction/consolidation that has occurred, most of the operations left are mostly professional. Additionally, ADF&G has a robust onboard observer program that they oversee, requiring a large percentage of these fleets to carry an observer onboard".

7.8. Other information that may affect the outcome of certification.

The assessment team is not aware of any other information that may affect the outcome of certification including an update on any new fishery developments since certification not already covered in other sections.

7.9. Update on consistency to the fundamental clauses of the RFM Fishery Standard

There were not changes in the fishery relevant to the fundamental clauses of the RFM Fishery Standard. Consequently, the BSAI crab fishery continues to show consistency to those fundamental clauses.

7.9.1. Section A: The Fisheries Management System

7.9.1.1. Fundamental Clause 1. Structured and legally mandated management system

1.	**There shall be a structured and legally mandated management system based upon and respecting international, State, and local fishery laws, for the responsible utilization of the stock under consideration and conservation of the marine environment.**
Summary of relevant changes:	The certified BSAI king and Tanner crab fisheries comply with RFM Fundamental Clause 1. The surveillance evidence indicates that these fisheries operate within a structured and legally mandated management system that adheres to international and local fishery laws, ensuring responsible stock utilization and marine environment conservation. 1.1. There shall be an effective legal and administrative framework established at local and national level appropriate for the fishery resource and conservation and management. The crab fisheries in Alaska's Bering Sea and Aleutian Islands (BSAI) are regulated by the Fishery Management Plan (FMP) for Commercial King and Tanner Crab, which received authorization from the US Secretary of Commerce on June 2, 1989. The North Pacific Fishery Management Council (NPFMC) and its Crab Plan Team (CPT) developed the Fishery Management Plan (FMP), which was subsequently submitted to the National Marine Fisheries Service (NMFS) for public review and commentary prior to approval by the Secretary of Commerce (NPFMC, 2011). The Magnuson-Stevens Fishery Management and Conservation Act (MSFMCA or MSA) established the North Pacific Fishery Management Council (NPFMC) as one of eight regional councils responsible for overseeing the management of the nation's fisheries. The MSA is the principal legal instrument regulating the BSAI crab fisheries. The Act delineates ten national standards for the conservation and management of fisheries (16 USC 1851), which are mandatory for all Fishery Management Plans (FMPs). Within the MSA, the NPFMC is authorized to formulate a Fishery Management Plan (FMP) and any requisite amendments for each fishery within its authority, subsequently submitting them to the Secretary of Commerce for approval, disapproval, or partial approval. The NPFMC oversees crab management in the BSAI, whereas the FMP establishes a cooperative management framework between State and Federal authorities, delegating crab management to the State of Alaska with restricted Federal oversight. 1.2. Management measures shall take into account the whole stock unit over its entire area of stock distribution. The BSAI Crab RFM Re-assessment Report (Mateo *et al.,*2022) outlines that management measures take into account the full biological unit of the stock across its distribution range, the migratory routes of the species throughout its life cycle, and other biological attributes of the stock. The Council and NMFS annually generate a Stock Assessment & Fishery Evaluation (SAFE) report encompassing all crab stocks within the BSAI King and Tanner Crab Fishery Management Plan (FMP), including the five populations now under review. State and federal assessment biologists convene at the NPFMC Plan Team meetings to exchange assessment data and harvest strategies, ensuring conservation management across the whole stock distribution. Current investigations into crab stock structure encompass studies on distribution and movement (Murphy, 2020; Daly *et al*., 2020) alongside population genetic research (e.g., Johnson, 2019). Recently, research on red king crab (RKC) stock structure (St John *et al.,* 2024) demonstrated Substantial Genetic Structure and Evidence of Local Adaptation in Alaskan Red King Crab. St. John *et al*., (2024) generated low-coverage whole genome sequencing (lcWGS) data on red king crabs from five regions: The Aleutian Islands, eastern Bering Sea, northern Bering Sea, Gulf of Alaska,

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and Southeast Alaska. They used data from millions of genetic markers generated from lcWGS to build on previous studies of population structure in Alaska that used < 100 markers and to investigate local adaptation. The authors found each of the regions formed their own distinct genetic clusters, some containing subpopulation structure. Most notably, they we found that the Gulf of Alaska and eastern Bering Sea were significantly differentiated, something that had not been previously documented. Inbreeding in each region was low and not a concern for fisheries management. They found genetic patterns consistent with local adaptation on several chromosomes and one particularly strong signal on chromosome 100. At this locus, the Gulf of Alaska harbors distinct genetic variation that could facilitate local adaptation to their environment. The findings support the current practice of managing red king crab at a regional scale, and they strongly favor sourcing broodstock from the target population if stock enhancement is considered to avoid genetic mismatch

1.3./1.4/1.5./1.6. Transboundary stocks.

The five stocks under assessment are not considered shared, straddling, high seas, or highly migratory stocks, nor are they considered common shared resources exploited by two or more States. As such, the following six supporting clauses are not applicable: 1.3, 1.3.1, 1.4, 1.4.1, 1.5 and 1.6.1.

1.6 The means to finance fisheries management organizations are agreed and such arrangements aim to recover costs of fisheries conservation, management, and research.

Fisheries management activities, organizations, and arrangements are financed by defined procedures, which, when applicable, seek to recoup the expenses associated with fisheries conservation, management, and research. The primary expenses related to the management, research, and enforcement of the BSAI crab fishery are financed by Congressional allocations for federal programs. Besides money from the Alaska Legislature, NMFS allocates additional financial resources to the state of Alaska. The Crab Observer Program is funded by business revenue and donations from Test Fish. ADFG submits an annual financial report to the Crab Observer Oversight Task Force (COOTF) detailing test fish expenditures for the BSAI crab fisheries observer program (ADFG, 2023).

1.7. Review and Revision of conservation and management measures.

The NPFMC has established systems to ensure the ongoing evaluation of the efficacy of conservation and management actions. Mechanisms are in place to revise or abolish current management measures based on new knowledge. The MSA mandates that Regional Fishery Management Councils "continuously review and revise, as necessary, the assessments and specifications established under section 1853(a)(3) and (4) of this title concerning the optimum yield," as stated in 1852(f)(5).

The Alaska Board of Fisheries, similar to the North Pacific Fishery Management Council, possesses tools to ensure the ongoing evaluation of the effectiveness of state conservation and management policies, especially those pertaining to Bering Sea and Aleutian Islands crab stocks. The ADFG publishes the BOF meeting calendar to enable stakeholders to propose amendments to existing regulations or offer feedback on current proposals. This encompasses, for instance, the compilation and dissemination of a Book of Proposals (e.g., BOF 2024-2025 Proposal Book[8]) that delineates all regulatory proposals to be considered by the BOF at forthcoming meetings.

[8] https://www.adfg.alaska.gov/index.cfm?adfg=fisheriesboard.proposalbook

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	Compelling evidence supports the ongoing evaluation of the effectiveness of existing conservation and management strategies, necessitating revisions based on new findings. In June 2023, the North Pacific Fishery Management Council (NPFMC) commenced the development of a Programmatic Environmental Impact Statement (EIS) for all fisheries under its management and recommended that the National Marine Fisheries Service (NMFS) initiate NEPA scoping and seek public input on the following Purpose and Needs Statement: "The federal action under consideration aims to elucidate the management policy and objectives for all federal fisheries governed by the Magnuson-Stevens Act and the Halibut Act, under the jurisdiction of the North Pacific Fishery Management Council (Council) in the Gulf of Alaska, Bering Sea, and Aleutian Islands, including objectives for adapting to the impacts of climate change." This action aims to guarantee that the Council's management framework is sufficient to address current and future issues in federal fisheries, and to articulate and execute that framework comprehensively to enhance the Council's ecosystem-based management strategy. In light of evolving conditions in fisheries, new Council initiatives, and substantial climate-related effects on the marine ecosystem, it is imperative to assess the management policy and objectives for federal fishery management to ensure adaptability and responsiveness. This evaluation aims to align with the goals of the Magnuson-Stevens Act and the Halibut Act, thereby guaranteeing the long-term sustainability of the stocks governed by these statutes and maintaining participation in and benefits from the fisheries over time. The Council aims to provide a management framework that utilizes the most reliable scientific data, encompassing climate science and indigenous knowledge, while also acknowledging the Alaska tribes and people dependent on subsistence resources" (NPFMC, 2023). During the NPFMC meeting in February 2024[9], the Council was presented with an overview of the context and subsequent actions regarding the Programmatic Evaluation that was launched in June 2023. The proposed initiative aims to establish new fisheries management policies, goals, and objectives for all federally regulated fisheries in the North Pacific, specifically those encompassed in the Fishery Management Plans for Bering Sea/Aleutian Islands and Gulf of Alaska Groundfish, Bering Sea/Aleutian Islands Crab, Scallop, Salmon, and the halibut fisheries governed by the Halibut Act. Staff requested direction on subsequent actions and the Council's approach to facilitating meaningful interaction with Alaska Native Tribes and others concerning the Programmatic. In reaction to public testimony, the Council opted to postpone the PEIS timeframe instead of initiating the official NEPA scoping process this July. This amended timeframe would allocate extra time for pre-scoping, facilitating substantial and significant public and Tribal involvement in the formulation of the programmatic evaluation, encompassing feedback on the alternatives and the scope of the activity. Staff will present a plan for targeted participation opportunities to the Council in April 2024. The Council also promoted official consultation between Alaska Native Tribes and NMFS. The Council received feedback from the public and Tribes indicating that summer is an impractical period for consultations with Western Alaska Tribes; thus, staff are endeavoring to conduct at least one engagement session before the onset of summer. Data obtained from engagement sessions and Tribal consultations can inform the contents of the Notice of Intent, encompassing stakeholder and Tribal viewpoints on: The rationale and necessity for the planned action.

[9] https://www.npfmc.org/february-2024-newsletter/

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	The environmental impact statement (EIS) should evaluate alternatives, anticipated impacts, and pertinent types of assessments related to the proposed action. Request for information regarding the timeline for the decision-making process ahead. The initiative to revise the Council's fisheries management policies, aims, and objectives is not exclusive to the Bering Sea; the Council invites contributions from stakeholders and Tribes with insights from the Gulf of Alaska, Aleutian Islands, and Bering Sea regions. Furthermore, deliberations at the June 2024 Climate Scenarios Workshop may be taken into account in the subsequent delineation of the Programmatic Evaluation. The Council will utilize the supplementary input obtained during pre-scoping to evaluate potential modifications to the previously established alternatives and determine the content for the formal NEPA Notice of Intent (NOI) to Prepare a Programmatic Environmental Impact Statement (PEIS), which is slated for publication in fall 2024. The Council is required to finalize a PEIS within two years following the NOI publication. Throughout this period, the Council will persist in evaluating public comments obtained via NEPA scoping and ongoing evaluations of the analysis, modifying alternatives or the analytical scope as necessary. At the April 2024 NPFMC meeting[10], the Council was presented with a brief overview of engagement planning for the Programmatic Evaluation under Staff Tasking. In response to public testimony and input from tribal stakeholders, the Council endorsed postponing the formal NEPA scoping process, initiated by NMFS publishing a Notice of Intent to prepare the PEIS, until after the Council has obtained the initial review of the chum salmon bycatch action. Staff requested Council feedback on further tribal engagement initiatives that may take place before the formal NEPA scoping process. The Council persists in endorsing a transparent, inclusive, and substantive process for the development of the PEIS. The Council endorses the ongoing virtual tribal engagement sessions and NMFS Tribal Consultations, provided they do not coincide with the summer/fall subsistence season. The Council seeks reciprocal involvement about the PEIS and invites Tribal bodies, together with Alaska Native and rural communities, to extend invitations for visits to their locales for the Council, staff, and NMFS. The objective of these excursions is to advance discussions regarding the development of the PEIS and its alternatives. During the December 2024 NPFMC meeting[11], the Council confirmed the roadmap for climate resilience planning, as revised by staff, which offers an overview of recent advancements and forthcoming milestones for NPFMC climate initiatives financed by the Inflation Reduction Act (IRA). The timetable encompasses stages pertinent to all three IRA financing objectives. This timetable will be consistently updated to facilitate forthcoming Council debates. Actions pertaining to Objective 3 under the IRA are also incorporated in the climate workplan (see to the separate weekly article). IRA Objective 1: Programmatic Assessment The Programmatic Evaluation underpins IRA financing Objective 1, which aims to establish a climate-resilient management policy. The Council ratified a purpose and need statement in June 2023. Previous discussion papers include more context on programming Environmental Impact Statements

[10] https://www.npfmc.org/april-2024-newsletter/
[11] https://www.npfmc.org/december-2024-newsletter/

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	(February 2023) and a comprehensive summary of current Fishery Management Plan goals and objectives (February 2024). During its April 2025 meeting, the Council will enhance and elaborate on the high-level Programmatic Evaluation possibilities established in June 2023, allowing staff to commence analytical work on this initiative and to promote engagement with Tribes and stakeholders. The Council endorsed staff recommendations for pre-meeting information and materials to facilitate the April discussion, which includes an evaluation of current FMP goals and objectives, along with proposed (termed "strawman") language for the Council's consideration in formulating revised management approach statements, goals, and objectives. Materials will be derived from previous Council and public debates, including the June 2024 Climate Scenarios Workshop. Council personnel will conduct a public webinar in early March 2025 to address inquiries regarding the prospective scope of the Council's April initiative and the materials supplied by staff. <u>1.8. Transparent management arrangements and decision making.</u> NPFMC activities are structured with a high degree of transparency about management arrangements and decision-making processes. The Council's website offers extensive information, including meeting agendas, discussion papers, and decision records. All Council discussions occur in open, public sessions, and the Council proactively encourages stakeholder involvement (NPFMC, 2012). The Council's Three Meeting Outlook delineates themes anticipated to be significant and consequently addressed in the forthcoming three NPFMC sessions, enabling stakeholders to prepare and provide their perspectives for prior discussion. Like the NPFMC, the Alaska Board of Fisheries' management structures and decision-making protocols for BSAI crab fisheries are conducted with a high degree of transparency. BOF and ADFG offer extensive information on their website, encompassing meeting agendas, regulation proposals, discussion papers, news items, and decision records. The Board of Fisheries (BOF) shall evaluate proposals for modifications to the state's fishing regulations that are presented promptly by the public, organizations, advisory committees, and ADFG personnel (e.g., BOF 2024-2025 Proposal Book[12]). BOF discussions occur in a transparent, public forum that promotes stakeholder engagement. <u>1.9. Compliance with international conservation and management measures</u> The crab fisheries in question are conducted solely within the waters of the U.S. Exclusive Economic Zone and the State of Alaska. These fisheries are not present in the high seas. Consequently, when examined closely, supporting clause 1.9 is inapplicable. Nevertheless, rules govern high seas fishing activities, and the U.S. is proactively addressing this matter, exemplified by its adoption of the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas.
References:	ADFG. 2023. 2023 ADF&G Shellfish Observer Program Test Fishery Account Annual Report to COOTF. https://www.adfg.alaska.gov/static/fishing/PDFs/commercial/bering_aleutian/fy23_adfgreporttoCOOTF.pdf

[12] https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2024-2025/proposals/book-full.pdf

1.	**There shall be a structured and legally mandated management system based upon and respecting international, State, and local fishery laws, for the responsible utilization of the stock under consideration and conservation of the marine environment.**	
		BOF. 2024. Board of Fisheries 2024-2025 Proposal Book. October 2024 through March 2025. https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2024-2025/proposals/book-full.pdf CPT. 2023. BSAI Crab Plan Team Report. September 12-14, 2023. https://meetings.npfmc.org/CommentReview/DownloadFile?p=372e0a74-35d3-44cc-9f51-cd0d97d2e3e2.pdf&fileName=CPT%20Report%20September%202023.pdf Daly, B., et al. 2020. Red king crab larval advection in Bristol Bay: Implications for recruitment variability. Fisheries Oceanography 29(6): 505-525. https://onlinelibrary.wiley.com/doi/full/10.1111/fog.12492 FAO Compliance Agreement. 1993. Agreement to promote compliance with international conservation and management measures by fishing vessels on the high seas. FAO, Rome. http://www.fao.org/fileadmin/user_upload/legal/docs/012t-e.pdf Mateo I., G.P. Ennis, W Toller. 2022. Responsible Fishery Management (RFM): U.S. Alaska Bering Sea and Aleutian Islands King, Tanner, and Snow Crab Commercial Fisheries. 2nd Re-assessment. February 25, 2022. 345 pp. https://rfmcertification.org/certified-fishery-species/alaska-crab/ Johnson, G.M. 2019. Genetic diversity and population genetic structure of tanner crab *Chionoecetes bairdi* in Alaskan waters. Thesis (M.S.) University of Alaska Magnuson–Stevens Fishery Conservation and Management Act (MSFCMA), commonly referred to as the Magnuson–Stevens Act (MSA). Enacted April 13, 1976. 16 U.S.C. §§ 1801-1884 as amended. https://www.law.cornell.edu/uscode/text/16/chapter-38/subchapter-IV Murphy, J.T. 2020. Climate change, interspecific competition, and poleward vs. depth distribution shifts: Spatial analyses of the eastern Bering Sea snow and Tanner crab (*Chionoecetes opilio* and *C. bairdi*). Fisheries Research. Volume 223, March 2020, 105417. https://www.sciencedirect.com/science/article/abs/pii/S0165783619302723 NPFMC. 2011. Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs. North Pacific Fishery Management Council, October 2011. 229 p. http://www.npfmc.org/wp-content/PDFdocuments/fmp/CrabFMPOct11.pdf NPFMC. 2012. Statement of Organization, Practices, and Procedures of the North Pacific Fisheries Management Council. Draft, 23 March 2012. 31 p. https://www.npfmc.org/wp-content/PDFdocuments/membership/SOPPs412.pdf NPFMC. 2023. North Pacific Fishery Management Council D2 PEIS Council Motion, June 11, 2023. https://meetings.npfmc.org/CommentReview/DownloadFile?p=37104c8f-4824-41ed-a730-dd195dd32d5c.pdf&fileName=D2%20Motion.pdf
Statement of consistency to the RFM Fishery Standard	**The fishery continues to conform to the requirements of Fundamental Clause 1 of the RFM Fishery Standard**	

7.9.1.2. Fundamental Clause 2. Coastal area management frameworks

2.	**Management organizations shall participate in coastal area management, decision-making processes and activities related to the fishery and its users, supporting sustainable and integrated resource use, and conflict avoidance.**
Summary of relevant changes:	Certified BSAI King and Tanner crab fisheries are in conformance with RFM Fundamental Clause 2. Evidence viewed during surveillance confirms that relevant management organizations participate in coastal area management, decision-making processes and activities related to the fishery and its users, supporting sustainable and integrated resource use, and conflict avoidance. <u>2.1/2.2/2.3/2.4 Policy, legal and institutional frameworks adopted to achieve sustainable and integrated use of marine resources along with mechanisms to avoid conflict shall be in place.</u> A system of regulatory, legal, and institutional capacities has been established to guarantee the sustainable and integrated utilization of marine resources, together with efforts to prevent conflicts among users. NMFS and the NPFMC engage in institutional frameworks linked to coastal area management through the federal National Environmental Policy Act (NEPA) processes. This transpires whenever they produce, renew, or modify resources under their jurisdiction that may be affected by external events, and each time they establish, renew, or revise regulations. Consultation with representatives from the fishing sector and fishing communities is essential during decision-making processes, and information regarding management methods must be disseminated broadly. Prospective coastal zone developments and difficulties may be subjected to formal assessment and engagement via the processes, committees, and groups of fishery management bodies, including NPFMC and BOF meetings. All Council and BOF discussions occur in public meetings, and both organizations actively encourage stakeholder participation. Decisions are clearly recorded on the different websites of these institutions in a timely fashion[13, 14]. Management measures information is provided promptly. For instance, ADFG consistently publishes and disseminates publications that encapsulate current regulations (e.g., the 2024-2025 King and Tanner Crab Commercial Fishing Regulations; ADFG 2024), which are also accessible online[15]. The NPFMC provides public access to management measures on its website by posting current information about meetings, relevant issues, and Council publications. ADFG promptly publishes notifications concerning the execution of commercial fisheries management measures, including fishery advisories, summaries, press releases, and forecasts, on its website[16]. Likewise, NMFS provides information on its webpages regarding regulatory and management measures, as well as other resources pertinent to commercial fisheries[17]. <u>2.5 The economic, social and cultural value of coastal resources shall be assessed in order to assist decision-making on their allocation and use.</u> The assessment of the economic, social, and cultural value of Alaskan fisheries is a crucial component of the coastal resource management decision-making process. The primary responsibilities of the NPFMC and the BOF are to sustainably manage fisheries resources and allocate these resources to various users in accordance with the MSA.

[13] https://www.npfmc.org/
[14] https://www.adfg.alaska.gov/index.cfm?adfg=fisheriesboard.main
[15] https://www.adfg.alaska.gov/static/regulations/fishregulations/pdfs/commercial/cf_king_tanner_crab_2024_2025.pdf
[16] https://www.adfg.alaska.gov/index.cfm?adfg=home.main
[17] https://www.fisheries.noaa.gov/region/alaska

2.	**Management organizations shall participate in coastal area management, decision-making processes and activities related to the fishery and its users, supporting sustainable and integrated resource use, and conflict avoidance.**
	The Alaska Fisheries Science Center (AFSC) oversees the Economic and Social Sciences Research (ESSR) program in Alaska[18]. The objective of ESSR is to provide economic and sociocultural data to assist NMFS in executing its stewardship obligations. ESSR offers online access to community profiles containing baseline socioeconomic data for 136 Alaska towns significantly engaged in commercial fishing[19]. The website features extensive community biographies, succinct summaries, and searchable maps of communities engaged in commercial, recreational, and subsistence fishing. The AFSC has released economic status reports for the BSAI king and Tanner crab fisheries (Garber-Yonts *et al.,* 2024) and a market profile for Alaska groundfish and crab (AKFSC, 2022). A significant portion of the AFSC Program's operations is conducted in collaboration with several federal and state authorities, in addition to academic institutions. Current research areas include regional economic effect models, behavioral models of fishing operations, economic performance indicators, and the non-market worth of live marine resources. The Alaska Fisheries Information Network (AKFIN) offers additional data regarding the value of coastal resources, with a mission to integrate, manage, and communicate information pertaining to commercial fishing[20]. The AFKIN preserves an analytical database of historic, commercial fisheries data from both State and Federal sources in Alaska, which is essential for fisheries analysts and economists. These records are essential for assessing the economic value of Alaska's fishing industry, among other factors (McKinley Group, 2022). Annual results from economic assessments are documented in Economic Stock Assessment and Fishery Evaluation Reports, referred to as “Economic SAFE reports” (Garber-Yonts et al.,2024)), alongside detailed information on stock assessments and updates regarding ecosystem status and trends, known as “Ecosystem SAFE” reports.
References:	ADFG. 2024. 2024 – 2025 Statewide King and Tanner Crab Commercial Fishing Regulations. Alaska Department of Fish and Game. 207 pp. https://www.adfg.alaska.gov/static/regulations/fishregulations/pdfs/commercial/cf_king_tanner_crab_2024_2025.pdf Alaska Fisheries Science Center. 2019. Wholesale market profiles for Alaska groundfish and crab fisheries. 170 p. Alaska Fish. Sci. Cent., NOAA, Natl. Mar. Fish. Serv., 7600 Sand Point Way NE, Seattle WA 98115 https://repository.library.noaa.gov/view/noaa/25242 CEC Strategic Plans. http://www.cec.org/files/documents/strategic_plans/cec-strategic-plan-2021-2025.pdf Garber-Yonts, B, R. Dame, S. Kasperski, A. Abelman, J. Lee. 2024. Stock Assessment and Fishery Evaluation Report for the King and Tanner Crab Fisheries of the Gulf of Alaska and Bering Sea/Aleutian Islands Area: Economic Status of the BSAI King and Tanner Crab Fisheries off Alaska, 2024. https://www.npfmc.org/wpcontent/PDFdocuments/resources/SAFE/CrabSAFE/CrabEconSAFE.pdf McKinley Group. 2022. The Economic Value of Alaska’s Seafood Industry. January 2022. Prepared Report prepared for Alaska Seafood Marketing Institute. 34 pp. https://mckinleyresearch.com/wp-content/uploads/2023/08/mrg_asmi-economic-impacts-report_final.pdf

[18] https://www.fisheries.noaa.gov/alaska/socioeconomics/alaska-economic-and-social-sciences-research
[19] https://www.fisheries.noaa.gov/resource/map/alaska-subsistence-fishing-communities-interactive-map
[20] https://www.psmfc.org/program/alaska-fisheries-information-network-akfin

2.	**Management organizations shall participate in coastal area management, decision-making processes and activities related to the fishery and its users, supporting sustainable and integrated resource use, and conflict avoidance.**
Statement of consistency to the RFM Fishery Standard	**The fishery continues to conform to the requirements of Fundamental Clause 2 of the RFM Fishery Standard**

7.9.1.3. Fundamental Clause 3. Management objectives and plan

3.	**Management objectives shall be implemented through management rules and actions formulated in a plan or other framework.**
Summary of relevant changes:	Certified BSAI king and Tanner crab fisheries remain in conformance with RFM Fundamental Clause 3. As summarized below, evidence viewed during surveillance confirms that the management objectives for these fisheries continue to be implemented through management rules and actions that are clearly articulated in a fishery management plan (FMP). 3.1 Long-term management objectives shall be translated into a plan or other management document and be subscribed to by all interested parties. The Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs (NPFMC, 2011) delineates long-term objectives. The aims of the FMP are governed by and align with the Magnuson-Stevens Act (MSA). Management decisions are determined by the Council and BOF, and executed and enforced by AWT, NMFS-OLE, and USCG. The NPFMC and ADFG publish Council and Board deliberations and related information on their websites for public access. The decision-making processes of both agencies are highly transparent and inclusive of all stakeholders, ensuring that the plan is endorsed by all interested parties. 3.2. Management measures should limit excess fishing capacity, promote responsible fisheries, take into account artisanal fisheries, protect biodiversity and allow depleted stocks to recover. Conservation and management strategies for BSAI crab reduce excessive fishing capacity and guarantee that stock exploitation remains economically sustainable. Crab Rationalization (CR), implemented in 2005, imposed a limit on the number of customers, prolonged fishing seasons, and let vessel operators to form cooperatives, leading to a reduction in the number of vessels and a decrease in gear deployed in the fishing grounds[21],[22]. These revisions were prompted by a Congressional approval that established Processor Quota Shares and Individual Fishing Quotas for rationalized crab fisheries in the Bering Sea and Aleutian Islands (BSAI). The Council commissioned a decade-long evaluation of the efficacy of crab rationalization (NPFMC, 2017). The authors of the CR review determined that the reduction in crab harvesting and processing capacity since the implementation of the CR Program is quantifiable and relatively objective, particularly when assessed by the number of vessels and processing facilities involved in CR program fisheries over time. A draft version of the 17-Year Program Review for the Crab Rationalization Management Program in the Bering Sea/Aleutian Islands (CR Program Review) was submitted to the Scientific and Statistical Committee (SSC), the Advisory Panel (AP), and the North Pacific Fishery Management Council (Council) as agenda item D4 during the Council's June 2024 meetings in Kodiak, Alaska. The AP's motion about the CR Program Review stated, "The AP recommends that the Council approve the Bering Sea Crab Rationalization Program review." The Council's resolution for review stated, "The Council endorses the Bering Sea Crab Rationalization Program review, following the revisions deemed practicable by the SSC." Both the AP and Council measures were approved unanimously. The AP and Council approved motions to commence discussion papers aimed at examining possible future modifications to CR Program components that go beyond the purview of this program review. Finally, the 17-Year Program Review for the Crab Rationalization Management Program in the Bering Sea/Aleutian Islands was published in August 2024.

[21] https://www.fisheries.noaa.gov/alaska/sustainable-fisheries/bering-sea-and-aleutian-islands-crab-rationalization-program
[22] https://www.npfmc.org/fisheries-issues/fisheries/bsai-crab-allocations/

3.	Management objectives shall be implemented through management rules and actions formulated in a plan or other framework.
	The present (final) iteration of the CR Program Review includes adjustments suggested by the SSC to the extent feasible, in accordance with the Council's motion. This version of the document has been revised to reflect changes made after the June 2024 Council meetings, incorporating materials developed for the June 2024 presentations to the SSC, AP, and Council, discussions held with each body during the presentations, and public feedback received at the June 2024 meetings. ADFG monitors the ex-vessel value of fisheries and generates Annual Management Reports (e.g., Nichols and Shaishnikoff, 2022) that facilitate the study. Economists from NPFMC, NMFS, and ADFG engage in the evaluation and review process of fishery management recommendations, utilizing both biological and socioeconomic data that has been collected and analyzed. Subsistence and community development initiatives are also considered during the allocation of money. Formal procedures exist to guarantee the recovery of depleted supplies. The Magnuson-Stevens Act section 304(e)(4)(A) and the National Standard Guidelines mandate the formulation of a rebuilding plan to avert overfishing and restore depleted species. Rebuilding must transpire expeditiously, taking into account the condition and biology of overfished fish stocks, the requirements of fishing communities, guidance from international organizations in which the US is involved, and the interplay between the overfished fish stock and the marine ecosystem. Rebuilding systems for reduced stocks are effectively applied in BSAI crab fisheries, as demonstrated by the recent endorsement of a rebuilding plan for snow crab in the Bering Sea (50 CFR 679: NOAA, 2023). Explicit objectives and management strategies are in place to maintain biodiversity in aquatic habitats and ecosystems, as well as to safeguard endangered species. The MSA creates a comprehensive legislative framework for the preservation of benthic biodiversity in aquatic ecosystems. Likewise, the Endangered Species Act (ESA) provides a comprehensive legal framework for the preservation of endangered species. The NPFMC's management process encompasses the preservation of aquatic habitat and ecosystem biodiversity. The BSAI crab FMP delineates seven management objectives, including a specific habitat target (NPFMC, 2024). The North Pacific Fishery Management Council (NPFMC) has implemented an Ecosystem-Based Fishery Management (EBFM) strategy that prioritizes biodiversity conservation at the ecosystem level[23].
References:	Magnuson–Stevens Fishery Conservation and Management Act (MSFCMA), commonly referred to as the Magnuson–Stevens Act (MSA). Enacted April 13, 1976. 16 U.S.C. §§ 1801-1884 as amended. https://www.law.cornell.edu/uscode/text/16/chapter-38/subchapter-IV Nichols, E., and J. Shaishnikoff. 2022. Annual management report for shellfish fisheries of the Bering Sea/Aleutian Islands Management Area, 2021/22. Alaska Department of Fish and Game, Fishery Management Report No. 22-28, Anchorage. https://www.adfg.alaska.gov/FedAidPDFs/FMR22-_28.pdf NOAA, 2023. 50 CFR 679 Fisheries of the Exclusive Economic Zone Off Alaska; Snow Crab Rebuilding Plan in the Bering Sea and Aleutian Islands. A Rule by the National Oceanic and Atmospheric Administration on 09/07/2023. 88 FR 61477. https://www.federalregister.gov/documents/2023/09/07/2023-19300/fisheries-of-the-exclusive-economic-zone-off-alaska-snow-crab-rebuilding-plan-in-the-bering-sea-and

[23] https://www.npfmc.org/how-we-work/management-policies/

3.	Management objectives shall be implemented through management rules and actions formulated in a plan or other framework.
	NPFMC, 2024. Fishery Management Plan for Bering Sea and Aleutian Islands King and Tanner Crabs. North Pacific Fishery Management Council. October 2024. 200 p. https://www.npfmc.org/wp-content/PDFdocuments/fmp/Crab/CrabFMP.pdf NPFMC, 2017. Ten-Year Program Review for the Crab Rationalization Management Program in the Bering Sea/ Aleutian Islands. North Pacific Fishery Management Council. Final Draft: January 2017. 249 pp. https://www.npfmc.org/wpcontent/PDFdocuments/catch_shares/Crab/Crab10yrReview_Final2017.pdf
Statement of consistency to the RFM Fishery Standard	**The fishery continues to conform to the requirements of Fundamental Clause 3 of the RFM Fishery Standard**

7.9.2. Section B: Science & Stock Assessment Activities, and the Precautionary Approach

7.9.2.1. Fundamental Clause 4. Fishery data

4.	**There shall be effective fishery data (dependent and independent) collection and analysis systems for stock management purposes.**
Summary of relevant changes:	All fishery removals and mortality of the target stocks is considered by management. ADFG undertakes a comprehensive, annual monitoring program to collect data on retained catch, bycatch/discards in all BSAI directed crab fisheries as well as crab bycatch/discards in all groundfish fisheries. There is ongoing annual monitoring of ecosystem conditions that provides a basis for evaluation of impacts on recruitment to BSAI crab stocks of factors other than fishing. A scheme of at-sea and dock-side observers is established to collect accurate data for research and support compliance with applicable fishery management measures. NMFS conducts an annual fishery-independent trawl survey of the eastern Bering Sea to determine the distribution and abundance of crab and groundfish resources. It provides fishery-independent indices of relative stock abundance/biomass, size/sex composition and shell condition for four of the five fisheries under consideration. The AI Golden King crab stock is not covered in this survey. A cooperative AI Golden King crab (pot) survey is carried out annually by the Aleutian Islands King Crab Foundation (an industry group) and ADF&G (for the first time in August 2018) in the EAG (east of 174o W longitude) and WAG (west of 174o W longitude) fisheries, by vessels that were quota fishing (i.e., each vessel fishing an allotted share of total allowable catch). Review of the SAFE reports for the 2024 assessments of each of the BSAI crab fisheries/stocks under consideration in this 2nd audit report showed the full suite of updated data from the ongoing annual monitoring programs described above were included. However, there was one noteworthy change in the 2024 NMFS trawl survey. So-called corner stations that have been sampled since 1983 in the Saint Matthew Island area were excluded and this resulted in estimated mean biomass for 1983-2023 being only 79% of the mean biomass for the same time period with corner stations included. This change did not compromise determination of stock status for SMBKC in 2024 nor did it affect assessments for other stocks. Details of the change are described further in the summary of the assessment for SMBKC in Section 7.4.2. No further changes to any of the relevant FC 4 supporting clauses detailed in the re-assessment report were identified over the course of the 2nd audit site visit.
References:	https://www.npfmc.org/wp-content/PDFdocuments/fmp/Crab/CrabFMP.pdf https://www.npfmc.org/about-the-council/plan-teams/bsai-crab-planning-team/#currentcrab https://www.fisheries.noaa.gov/alaska/fisheries-observers/north-pacific-observer-program https://www.st.nmfs.noaa.gov/st1/recreational/documents/Intercept_Appendices/Appendix%20M%20031408%20NOAA%20administrative%20order%20216-100.pdf https://www.npfmc.org/wp-content/PDFdocuments/resources/SAFE/CrabSAFE/CrabEconSAFE.pdf https://meetings.npfmc.org/CommentReview/DownloadFile?p=16285ec6-4621-44ff-a06d-c15563ac9510.pdf&fileName=C1%20BSAI%20Crab%20Introduction.pdf

4.	**There shall be effective fishery data (dependent and independent) collection and analysis systems for stock management purposes.**	
	https://www.adfg.alaska.gov/static/fishing/PDFs/commercial/bering_aleutian/2024_2025_bsai_crab_tac_industry_meeting.pdf https://www.fisheries.noaa.gov/alaska/ecosystems/alaska-fish-research-surveys	
Statement of consistency to the RFM Fishery Standard		**The fishery continues to conform to the requirements of Fundamental Clause 4 of the RFM Fishery Standard.**

7.9.2.2. Fundamental Clause 5. Stock assessment

5.	**There shall be regular stock assessment activities appropriate for the fishery, its range, the species biology, and the ecosystem, undertaken in accordance with acknowledged scientific standards to support its optimum utilization.**
Summary of relevant changes:	A well-organized institutional framework is in place that conducts the research required for fishery management purposes. Results are made available as needed to ensure that the best scientific evidence is used for fisheries conservation, management, and development. The BSAI crab fisheries are jointly managed by the North Pacific Fishery Management Council (NPFMC), the National Marine Fisheries Service Alaska Region, BOF and ADFG under the BSAI Fishery Management Plan (FMP). Day-to-day management decisions and enforcement are devolved to the State of Alaska through the ADFG. A requirement of the FMP is the production of an annual stock assessment and fishery evaluation (SAFE) report. For each stock/fishery, the SAFE report provides a detailed description of the data and methodology used in the stock assessment, any changes in approaches, the estimated status of the stocks in relation to pre-determined fisheries management reference points, advice on appropriate harvest levels, and an assessment of the relative success of existing state and federal fishery management programs. Results of assessments conducted in 2024 for each of the stocks under consideration are summarized in Sections 7.4.1 to 7.4.5 of this report which also include links to each SAFE report. In the case of the AIGKC assessment, it is noted that the transition to use of the GMACS modelling framework had been completed per the 2024 stock assessment. No further changes to any of the relevant FC 5 supporting clauses detailed in the re-assessment report were identified over the course of the 2nd audit site visit.
References:	https://www.npfmc.org/wp-content/PDFdocuments/fmp/Crab/CrabFMP.pdf https://www.fisheries.noaa.gov/about/alaska-fisheries-science-center https://www.fisheries.noaa.gov/about/resource-assessment-and-conservation-engineering-division https://www.fisheries.noaa.gov/about/resource-ecology-and-fisheries-management https://www.fisheries.noaa.gov/alaska/ecosystems/habitat-and-ecological-processes-research-alaska#:~:text=The%20Habitat%20and%20Ecological%20Processes%20Research%20Program%20focuses%20on%20integrated,on%20four%20main%20research%20areas https://www.fisheries.noaa.gov/resource/publication-database/noaa-fisheries-scientific-publications-database https://meetings.pices.int/
Statement of consistency to the RFM Fishery Standard	**The fishery continues to conform to the requirements of Fundamental Clause 5 of the RFM Fishery Standard.**

7.9.2.3. Fundamental Clause 6. Biological reference points and harvest control rule

6.	**The current state of the stock shall be defined in relation to reference points, relevant proxies, or verifiable substitutes that allow effective management objectives and targets to be set. Remedial actions shall be available and taken where reference points or other suitable proxies are approached or exceeded.**
Summary of relevant changes:	Safe limit reference points have been established for exploitation of BSAI crab stocks and measures are in place to ensure fishing mortality is decreased when a limit reference point is approached. The biomass that is associated with MSY, BMSY, is effectively treated as the target reference point since it is the desired stock condition but, effective harvest is always lower, consistent with ABC, ACL and TAC formulations, although MSY itself is treated as an upper limit rather than a target reference point because the overfishing limit (OFL) is based upon MSY. The (lower) limit reference point corresponds to 0.5 x BMSY. The harvest rate in the directed fishery is decreased when stock biomass is moving from upper to limit reference point. At stock status level (c), the ratio of current biomass to BMSY (or a proxy for BMSY) is below β (critical biomass threshold), directed fishing is prohibited and an FOFL at or below FMSY would be determined for all other sources of fishing mortality in the development of a rebuilding plan. The stock is considered as overfished if the annual estimated biomass drops below the minimum stock size threshold (MSST). As the annual catch limit (ACL) is never set at a level that would exceed the overfishing level (OFL), the OFL and its associated value of fishing mortality, FOFL, can be considered as limit reference points established for all five crab stocks. As OFL is based upon MSY, then MSY is treated as a limit rather than a target reference point. In fact, ACL (=ABC for crab stocks) is lower than OFL so the limit reference point is actually lower than MSY. The optimum yield (OY), which may range from 0 to <OFL, is also a limit reference point. OY is prescribed on the basis of MSY from the fishery reduced by any relevant social, economic, or ecological factor, or in the case of an overfished stock, provides for rebuilding to a level consistent with producing MSY from that fishery. If overfishing has occurred (total catch exceeds OFL) or the stock is overfished (biomass is less than MSST), the Magnuson- Stevens Act (MSA) requires NPFMC to immediately end overfishing and rebuild stocks. The MSA also requires that the FMP includes accountability measures to prevent ACLs from being exceeded and to correct overages if they do occur. Stock status definitions and determination criteria are provided in the introduction to the annual SAFE report. A summary of the status of the BSAI crab stocks under consideration per 2024 assessments follows. **Eastern Bering Sea Snow Crab.** In the 1st surveillance assessment of the certified BSAI crab fisheries conducted in 2023, the assessment team found that the Eastern Bering Sea snow crab unit of certification was not in conformity with RFM Supporting Clause 6.3 because NMFS had determined that the EBS snow crab was “overfished”. A minor non-conformity was raised, and the fishery client prepared a corrective action plan that was accepted by the assessment team. Based on the SSC recommended model, the 2024 stock assessment determined that overfishing is not occurring for snow crab, and the stock is not currently overfished (MMB is above the minimum stock size threshold) but will remain under a rebuilding plan until it has rebuilt to the BMSY level. A summary of the 2024 assessment is provided in Section 7.4.1.

6.	**The current state of the stock shall be defined in relation to reference points, relevant proxies, or verifiable substitutes that allow effective management objectives and targets to be set. Remedial actions shall be available and taken where reference points or other suitable proxies are approached or exceeded.**	
		Progress against the CAP since the 2023 audit is summarized in non-conformance 4 in Section 8.1.2. The non-conformance remains open as of this 2nd surveillance audit of the 3rdnd cycle of certification. **Saint Matthew Blue King Crab.** In the surveillance assessment of the certified BSAI crab fisheries conducted in 2018, the assessment team found that the St. Matthew Island Blue King Crab unit of certification was not in conformity with RFM Supporting Clause 6.3 because NMFS had determined that the SMBKC stock was "overfished". A minor non-conformity was raised, and the fishery client prepared a corrective action plan that was accepted by the assessment team. During the 2023 surveillance assessment, it was found that the stock continued to be designated as overfished in subsequent assessments and the assessment team again assigned a confidence level of "medium" to RFM Supporting Clause 6.3 and the minor non-conformity remained open. The SSC recommended model estimates mature male biomass in 2023/24 below the MSST, indicating that the stock remains overfished. A directed fishery closure has been in place since the 2016/17 season and estimated total bycatch has remained well below the overfishing level (OFL), hence overfishing has not occurred. A summary of the 2024 assessment is provided in Section 7.4.2. Progress against the CAP since the 2023 audit is summarized in non-conformance 1 in Section 8.1.2. The non-conformance remains open as of this 2nd surveillance audit of the 3rd cycle of certification. **Bristol Bay Red King Crab**. In 1st surveillance in 2023 the assessment team found that the BBRKC stock was not approaching an overfished status and it was past the midway point between the limit and target reference points. Therefore, the non-conformance opened at re-assessment was closed. It was determined that the stock was above the MSST in 2023/24 (99% of BMSY) and hence was not overfished. Since total catch was below the OFL (overfishing limit), overfishing did not occur. The projection using the lowest recruitment periods during 2013-2023 would not likely result in "approaching an overfished condition" based on the current harvest strategy. A summary of results from the 2024 stock assessment for BBRKC is included in Section 7.4.3. **Eastern Bering Sea Tanner Crab**. BMSY for this stock is 40,010 t, therefore MSST is 20,000 t. Because current MMB (88,210 t) > MSST, the stock is not overfished. Estimated total catch mortality was 1,086 t, which was less than the OFL for 2023-24 (36,200 t); consequently, overfishing did not occur. A summary of results from the 2024 stock assessment for tanner crab is included in Section 7.4.4. **Aleutian Islands Golden King Crab.** Biological reference points computed for EAG and WAG separately are summed for the full stock prior to stock status determination. The stock was above Minimum Stock Size Threshold (MMST = 50% of B35%) in 2023-24, and thus was not overfished, nor has ever been overfished at any point in its history. Nor did overfishing occur in 2023-24; total fishing mortality 2,755 t) was below the overfishing limit (4,182 t). A summary of results from the 2024 stock assessment for tanner crab is included in Section 7.4.5.

6.	**The current state of the stock shall be defined in relation to reference points, relevant proxies, or verifiable substitutes that allow effective management objectives and targets to be set. Remedial actions shall be available and taken where reference points or other suitable proxies are approached or exceeded.**
References:	https://www.npfmc.org/wp-content/PDFdocuments/fmp/Crab/CrabFMP.pdf https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareaaleutianislands.shellfish#management https://meetings.npfmc.org/CommentReview/DownloadFile?p=16285ec6-4621-44ff-a06d-c15563ac9510.pdf&fileName=C1%20BSAI%20Crab%20Introduction.pdf
Statement of consistency to the RFM Fishery Standard	**The fishery does NOT continue to conform to the requirements of Fundamental Clause 6 of the RFM Fishery Standard**

7.9.2.4. Fundamental Clause 7. Precautionary approach

7.	**Management actions and measures for the conservation of stock and the ecosystem shall be based on the precautionary approach. Where information is deficient a suitable method using risk management shall be adopted to consider uncertainty.**
Summary of relevant changes:	The precautionary approach is used in the conservation, management, and exploitation of BSAI crab stocks to conserve the resources and preserve their ecosystem. The MSA mandates the development of FMPs for all the federally managed/regulated fisheries. The NPFMC treats OFL (MSY) as an upper limit rather than a target. To account for the uncertainty involved in MSY estimation, catches are in line with the TAC and well below the OFL. Status determination criteria for crab stocks are calculated using a five-tier system that accommodates varying levels of uncertainty of information. The higher the stock tier status, the more conservative the determination of OFL and ABC. The ABC is a level of annual catch that accounts for the scientific uncertainty in the estimate of OFL and any other specified scientific uncertainty and is set to prevent, with a greater than 50 percent probability, the OFL from being exceeded. The system is intrinsically precautionary and based on a comprehensive management process that is consistent with the FAO Guidelines for the Precautionary Approach. During the 2023 fall assessment cycle for BSAI crab stocks the SSC requested that the CPT take up risk tables again for crab stocks. The CPT recommended bringing forward a draft risk table for BBRKC, tanner crab, and snow crab for the 2024 assessment cycle. The risk table approach, currently used in the NPFMC groundfish assessments, highlights external factors to the assessment performance across four categories: assessment-related, population dynamics, environmental/ecosystem, and fishery performance along with three levels of concern for each of these categories: normal, increased, or extreme. The table highlights potential issues in each of the category/concern combinations that should be considered when applying a buffer to the OFL to determine a recommended ABC. The table is included in Appendix D of the 2024 tanner crab SAFE (link provided below).
References:	FAO Technical Guidelines for Responsible Fisheries No. 2 – Precautionary approach to capture fisheries and species introductions. https://www.fao.org/4/w3592e/w3592e00.htm https://meetings.npfmc.org/CommentReview/DownloadFile?p=8f172e13-8107-478c-84a7-ad1400f5ffbe.pdf&fileName=BBRKC%20Appendix%20D.pdf https://meetings.npfmc.org/CommentReview/DownloadFile?p=91e4510f-2af7-47be-a622-02e1c381b571.pdf&fileName=Tanner%20Crab%20SAFE%20Appendix%20D.pdf
Statement of consistency to the RFM Fishery Standard	The fishery continues to conform to the requirements of Fundamental Clause 7 of the RFM Fishery Standard

7.9.3. Section C: Management Measures, Implementation, Monitoring, and Control

7.9.3.1. Fundamental Clause 8. Management measures

8.	**Management shall adopt and implement effective management measures designed to maintain stocks at levels capable of producing maximum sustainable yields, including harvest control rules and technical measures applicable to sustainable utilization of the fishery, and based upon verifiable evidence and advice from available objective scientific and traditional sources.**
Summary of relevant changes:	The NPFMC's FMP for BSAI crab fisheries is designed to maintain stocks at MSY levels. The main harvest control rule sets a limit on the annual catch that is based on an assessment of stock status against overfishing and overfished criteria and determines the overfishing level (OFL= MSY) and allowable biological catch (ABC). The ABC is a level of annual catch that accounts for the scientific uncertainty in the estimate of OFL and is set to prevent the OFL from being exceeded (further details included in Sections 7.9.7.1 and 7.9.7.2). In addition to catch limits, there are many other measures in place aimed at sustainable use of the crab resources. These include minimum legal size limitations based primarily on biological considerations. MLSs are set at sizes larger than size at 50% male maturity to ensure opportunity to mate before becoming vulnerable to the fishery. Female crabs cannot be retained unless a surplus is confirmed to be available. However, industry has shown little interest because females are smaller than males of the same age and have a lower meat yield than males of the same size. To enhance population reproductive potential, closed fishing seasons have been established to protect crabs during the molting and mating stages of their life cycle. Use of trawls and entanglement gear is specifically prohibited because of significant mortality that can be imposed on nonlegal crab. Pots and ring nets are the only commercial fishing gear permitted. Escape mechanisms must be incorporated in pots to allow female and sublegal male crab to escape prior to hauling. To reduce handling mortality, any undersized males and females that are caught must be released as soon as possible following removal from pots. To prevent ghost fishing by lost pots, biodegradable twine must be incorporated on all pots to allow escapement. When needed, pot limits may be applied to achieve ecological, economic, or social objectives of the FMP. The FMP must also identify Essential Fish Habitat (EFH) for each of the different crab species to include ecological and biological needs for each stage of the life cycle. To the degree practical, measures are taken to minimize adverse effects of fishing and to maintain and enhance EFH. These measures include designated areas closed to all fishing as well as other areas where the use of mobile bottom contact gear is prohibited. No changes to any of the relevant FC 8 supporting clauses detailed in the re-assessment report were identified over the course of the 2nd audit site visit.
References:	https://www.npfmc.org/wp-content/PDFdocuments/fmp/Crab/CrabFMP.pdf https://www.epa.gov/nepa https://meetings.npfmc.org/CommentReview/DownloadFile?p=c45c58ad-ec18-44f2-abc5-95ed49be1fd1.pdf&fileName=C6%20SMBKC%20Rebuilding%20Initial%20Review%20Analysis.pdf https://www.fisheries.noaa.gov/alaska/bycatch/crab-bycatch-rates-alaska https://www.fisheries.noaa.gov/alaska/sustainable-fisheries/restricted-access-management-division

8.	**Management shall adopt and implement effective management measures designed to maintain stocks at levels capable of producing maximum sustainable yields, including harvest control rules and technical measures applicable to sustainable utilization of the fishery, and based upon verifiable evidence and advice from available objective scientific and traditional sources.**	
	https://www.adfg.alaska.gov/static/regulations/fishregulations/pdfs/commercial/cf_king_tanner_crab_2023_2024.pdf https://www.npfmc.org/wp-content/PDFdocuments/catch_shares/Crab/AppendixA-SocialimpactAssessment.pdf	
Statement of consistency to the RFM Fishery Standard		**The fishery continues to conform to the requirements of Fundamental Clause 8 of the RFM Fishery Standard**

7.9.3.2. Fundamental Clause 9. Appropriate standards of fishers' competence

9.	**Fishing operations shall be carried out by fishers with appropriate standards of competence in accordance with international standards, guidelines, and regulations.**
Summary of relevant changes:	9.1./9.2./9.3. Education and training programs. Fishermen can utilize advanced education and training programs to enhance their skills and professional qualifications[24], [25], [26]. At the federal level, NOAA has developed a strategy to execute the FAO CCRF throughout all U.S. fisheries (NMFS 1997)[27]. The recently updated plan (NMFS 2012)[28] encompasses objectives pertaining to the education, safety, and training of fishermen. All individuals engaged in BSAI crab fishing operations receive education and training on the key provisions of the FAO CCRF (1995), relevant international conventions, and applicable environmental standards necessary for responsible fishing practices. In 2019, the United Fishermen of Alaska (UFA) and the Alaska Fisheries Development Foundation (AFDF) published research outlining the documentation and permits necessary for commercial fishing in Alaska[29]. Records of all BSAI crab fishers are kept within licensing and permission programs, encompassing details of their service and credentials, including competency certifications[30], [31].
References:	
Statement of consistency to the RFM Fishery Standard	**The fishery continues to conform to the requirements of Fundamental Clause 9 of the RFM Fishery Standard**

[24] http://www.avtec.edu/
[25] http://seagrant.uaf.
[26] http://amsea.org/
[27] https://repository.library.noaa.gov/view/noaa/3063
[28] https://repository.library.noaa.gov/view/noaa/4057/noaa_4057_DS1.pdf
[29] https://www.afdf.org/wp-content/uploads/Social-Responsibility-on-Vessels-in-Alaska-Med-Res-FINAL-2019-03-08.pdf
[30] https://www.fisheries.noaa.gov/alaska/sustainable-fisheries/restricted-access-management-division
[31] http://www.cfec.state.ak.us/

7.9.3.3. Fundamental Clause 10. Effective legal and administrative framework

10.	**An effective legal and administrative framework shall be established, and compliance ensured, through effective mechanisms for monitoring, surveillance, control, and enforcement for all fishing activities within the jurisdiction.**
Summary of relevant changes:	There were no significant changes in relation to conformance with Fundamental Clause 10. As summarized below, the evidence viewed during surveillance confirms that the certified BSAI crab fisheries continue to operate under an effective legal and administrative framework which utilizes robust mechanisms for monitoring, control, and surveillance (MCS). 10.1. Enforcement agencies and framework: Crab regulations are mainly implemented at sea by the National Marine Fisheries Service (NMFS) Office of Law Enforcement (OLE), utilizing United States Coast Guard (USCG) at-sea resources, and on land by the NMFS OLE in conjunction with the State of Alaska's Division of Wildlife Troopers (AWT). The AWT vessel E/V Stinson conducts at-sea enforcement, inspecting gear and catch for compliance with regulatory standards. The enforcement of Alaska fisheries rules and regulations, namely 50 CFR 679, is conducted by the US Coast Guard and the National Marine Fisheries Service Office of Law Enforcement. A joint effort is underway between the USCG and the AWT, concentrating on at-sea enforcement. State and federal laws must be enforced under joint supervision, with both state and federal officials actively conducting at-sea enforcement. The USCG is responsible for enforcing significant federal vessel regulations, including maritime safety, narcotics enforcement, compliance with the ESA and EFH mandates, and assuring the proper administration of federal permits, observer coverage, licenses, and VMS in crab fisheries. AWT possesses vessels equipped to perform at-sea compliance with gear laws, retrieve and confiscate crab pots, sample crab harvests, verify adherence to sex and size criteria, and confirm that the vessels hold all necessary state and federal licenses. Furthermore, AWT, in conjunction with ADFG area biologists and technicians, performs dockside vessel inspections, conducts hold examinations, and oversees harvested crab offloads for regulatory compliance. The crab fisheries evaluated in this context are solely harvested within the Alaska Exclusive Economic Zone (EEZ). These fisheries are excluded from any international agreements and do not fall within the purview of sub-regional or regional fisheries management organizations or structures. No foreign vessels are permitted to engage in fishing within the Alaska Exclusive Economic Zone (EEZ). All fishing vessels must possess a minimum of 75% U.S. ownership. Consequently, the complete crab collection is conducted by American vessels. Update on recent MCS activities: The USCG regularly provides updates to the NPFMC summarizing the agency’s broader enforcement activities in the region (e.g., USCG 2023) in relation to inter alia IUU fishing, US/Russia Maritime Boundary Line enforcement, and marine protected species and critical habitat enforcement. With respect to the BSAI crab fisheries under consideration here, in November 18, 2024 we received a communication from LCDR Jed Raskie, USCG D17 Domestic Fisheries Enforcement Section Chief USCG describing the enforcement activities for CY 2023 and CY 2024.

Table 11. Number of Boardings from CY2023 and CY2024

	Fishery	CY23 Boardings	CY24 Boardings
1	East Bering Sea Snow Crab	0	0
2	Bristol Bay Red King Crab	0	8
3	St. Mathew Island Blue King Crab	0	0
4	Tanner Crab	6	0
5	AI Golden King Crab	0	2

"*None of these boardings had fishery or safety violations. The overall level of compliance was HIGH. USCG did not observe or receive reports of gear loss.*

The only potential issue that was observed was that one of the AI Golden King Crab vessels set pots in a closed area. When the vessel went back to retrieve those pots (with a different captain onboard), the new captain released any crab caught in those pots that were set within the closed area. This information was relayed to the boarding team and verified on the catch logs when the boarding team investigated the potential violation".

The Alaska Wildlife Troopers (AWT) are present at sea and at the docks throughout the majority of the open fishing season. Fishermen engaged in the fisheries are verified to ensure they possess the requisite permits and licenses, are fishing in designated areas, and are not over the quota restrictions established by ADFG. AWT performs dockside inspections at ports of goods delivery. AWT examines permits and licenses, verifies the delivered product, and authenticates the site of the fishing activity. AWT further verifies that the product is accurately documented on the requisite fish ticket.

On November 7, 2024, we received a letter from Captain Derek DeGraaf, Southern Detachment Commander for Alaska Wildlife Troopers regarding the Alaska Wildlife Troopers (AWT) enforcement efforts during Bering crab fisheries for 2023-2024.

"*AWT continues to keep both an at-sea and dockside presence during most of this fishery, when the season is open. Fishermen participating in the fishery are checked to confirm they are properly permitted and licensed, fishing in the appropriate area and not exceeding quota limits set by the Alaska Department Fish and Game (ADF&G). Dockside inspections are conducted by AWT in ports where product is being delivered. AWT will inspect permits and licenses, product being delivered, and confirm the location the fishing occurred. Further AWT confirms product is properly being documented on the required fish ticket.*
Here is the information you requested:

1. *East Bering Sea Snow Crab-. This fishery was closed for the 2023-2024 season.*
2. *Bristol Bay Red King Crab- 14 vessels were boarded, 82 pots were inspected, and 43 commercial fishermen were contacted. Two federal violations were observed and forwarded to NMFS for no federal crab vessel permit, and for fishing without operation VMS.*
3. *St. Mathew Island Blue King Crab- This fishery was closed for the 2023-2024 season.*
4. *Bering Sea Tanner- No patrols/no gear inspected.*
1. *Aleutian Island Golden King Crab- No patrols/ no gear inspected. Dockside boardings conducted of all vessels involved (usually just three or four registered for this fishery). There was one case for the illegal sale of Golden King Crab by two crewmembers.*

Overall, AWT believe there to be a high level of compliance with regulations in these fisheries. With rationalization and the significant fleet reduction/consolidation that has occurred, most of the

10.	An effective legal and administrative framework shall be established, and compliance ensured, through effective mechanisms for monitoring, surveillance, control, and enforcement for all fishing activities within the jurisdiction.
	operations left are mostly professional. Additionally, ADF&G has a robust onboard observer program that they oversee, requiring a large percentage of these fleets to carry an observer onboard." 10.2./10.3/10.4. Fishing permit requirements: Federal regulations mandate that all vessels harvesting BSAI crab must possess the requisite approvals and permits for fishing. Fishing vessels are prohibited from operating on the specified resource without explicit authorization. A Federal Crab Vessel Permit (FCVP) is mandatory for all crab vessels engaged in the BSAI rationalized crab fishery. Owners of any vessel participating in the regulated crab fisheries (CR crab, including IFQ/IPQ fisheries; CDQ fisheries except Norton Sound king crab; and the Golden King Crab allocation to Adak) must file an annual FCVP. SFP (Stationary Floating Processor), CPR (Catcher-Processor), and CAT (Catch-and-Transfer) represent the three classifications of operational endorsements for catcher vessels. The FCVP mandates VMS and logbook reporting obligations. A copy of the permit must be onboard any fishing vessel and must be accessible for inspection by an authorized officer at all times. Vessels engaged in directed fishing for LLP groundfish species in the GOA or BSAI, or engaging in any BSAI LLP crab fishery, are required to possess a Federal LLP license as of January 1, 2000. The vessel must be named using the original LLP license that is onboard.
References:	
Statement of consistency to the RFM Fishery Standard	**The fishery continues to conform to the requirements of Fundamental Clause 10 of the RFM Fishery Standard**

7.9.3.4. Fundamental Clause 11. Framework for sanctions

11.	**There shall be a framework for sanctions for violations and illegal activities of adequate severity to support compliance and discourage violations.**
Summary of relevant changes:	As summarized below, evidence viewed during surveillance confirms the certified BSAI king and Tanner crab fisheries are in conformance with RFM Fundamental Clause 11. A framework for sanctions remains in place and is an effective means to support compliance and discourage violations. 11.1 States laws of adequate severity shall be in place that provide for effective sanctions. The MSA delineates four fundamental enforcement remedies for infractions (50 CFR 600.740 Enforcement policy)[32]: 1. Issuance of a citation, usually at the scene of the offense (see 15 CFR part 904, subpart E). 2. Assessment by the Administrator of a civil money penalty. 3. For certain violations, judicial forfeiture action against the vessel and its catch. 4. Criminal prosecution of the owner or operator for some offenses. In certain instances, the MSA mandates permit sanctions subsequent to the evaluation of a civil penalty or the enforcement of a criminal fine. In these instances, the MSA considers sanctions against the fishing vessel permit as serving a distinct purpose from the civil and criminal penalties imposed on the vessel or its owner/operator (50 CFR 600.740 (4)c). NOAA's "Policy for the Assessment of Civil Administrative Penalties and Permit Sanctions" (Penalty Policy) became effective on June 24, 2019, replacing earlier versions from 2011 and 2014[33]. This Policy aims to guarantee that civil administrative penalties and permit sanctions are imposed in a fair and consistent way, in compliance with the laws enforced by NOAA. 1. Civil administrative penalties and permit sanctions are assessed in accordance with the laws that NOAA enforces in a fair and consistent manner. 2. Penalties and permit sanctions are appropriate for the gravity of the violation. 3. Penalties and permit sanctions are sufficient to deter both individual violators and the regulated community as a whole from committing violations. 4. Economic incentives for non-compliance are eliminated. 5. Compliance is expeditiously achieved and maintained to protect natural resources. This updated Policy incorporates legislation enacted and regulations established following the release of the 2014 Policy, specifically: • The Illegal, Unreported, and Unregulated Fishing Enforcement Act of 2015, Pub. L. 114-81, enacted the Agreement on Port State Measures to Prevent, Deter, and Eliminate Illegal, Unreported, and Unregulated Fishing, and revised the enforcement provisions of several statutes overseen by NOAA. • The latest modifications to the maximum civil monetary penalties permitted under statutes administered and enforced by NOAA, in accordance with the Federal Civil Penalties Inflation Adjustment Act of 1990, are documented in 83 Fed. Reg. 706 (January 8, 2018). In cases of substantial infractions, the NOAA attorney may propose charges via NOAA's civil administrative procedure (refer to 15 CFR Part 904), by issuing a Notice of Violation and Assessment of a penalty (NOVA), Notice of Permit Sanction (NOPS), Notice of Intent to Deny Permit (NIDP), or a combination of these instruments. The NOAA attorney may alternatively suggest that a breach of a

[32] https://www.govinfo.gov/content/pkg/CFR-2010-title50-vol8/pdf/CFR-2010-title50-vol8-sec600-740.pdf
[33] https://www.noaa.gov/general-counsel/gc-enforcement-section/penalty-policy-and-schedules

11.	There shall be a framework for sanctions for violations and illegal activities of adequate severity to support compliance and discourage violations.
	criminal provision is substantial enough to necessitate referral to a U.S. Attorney's office for prosecution. 11.2 Sanctions applicable to violations and illegal activities shall be adequate in severity to be effective in securing compliance and discouraging violations wherever they occur. Sanctions shall also be in force to affect authorization to fish and/or to serve as masters or officers of a fishing vessel in the event of non-compliance with conservation and management measures. NOAA's OLE Agents and Officers may impose civil fines immediately on the violator through Summary Settlements (SS) or may submit the matter to NOAA's Office of General Counsel for Enforcement and Litigation (GCEL). GCEL may impose a civil penalty through a Notice of Permit Sanctions (NOPs) or a Notice of Violation and Assessment (NOVAs), or they may transfer the case to the U.S. Attorney's Office for criminal prosecution. For habitual offenders or individuals whose actions significantly affect the resource, criminal penalties may include substantial monetary fines, vessel confiscation, and/or incarceration as adjudicated by the US Attorney's Office. The sanctions are relatively stringent (NOAA 2023). They encompass the potential for temporary or permanent suspension of fishing privileges. The revocation or suspension of authorizations to act as masters or officers of a fishing vessel constitutes one of the enforcement alternatives. In the USA EEZ, punishments may include seizure of the catch, forfeiture of the vessel, financial fines, and imprisonment. The limited occurrence of recurrent offenders suggests that the imposed fines are sufficiently severe to ensure compliance and deter infractions. Ultimately, citizen and industry collaboration are fostered through initiatives like AWT's Fish and Wildlife Safeguard[34] program, which promotes the reporting of infractions and utilizes a diverse array of enforcement agents. 11.3 Fisheries management organizations shall ensure that sanctions for IUU fishing by vessels and, to the greatest extent possible, nationals under its jurisdiction are of sufficient severity to effectively prevent, deter, and eliminate IUU fishing and to deprive offenders of the benefits accruing from such fishing. This may include the adoption of a civil sanction regime based on an administrative penalty scheme. Fisheries management organizations shall ensure the consistent and transparent application of sanctions. All commercial crab catches in Alaska must be reported to ADFG via Fish Tickets or eLandings documentation within seven days of landing or initial purchase of the resource. Consequently, all legally harvested commercial crab in Alaska is documented. Sanctions for the unlawful collection of crab in Alaska are delineated in the state's Fish and Game Code AS 16.578[35] , and they are stringent. Sanctions encompass monetary fines, incarceration, revocation of permits, and confiscation of catch, equipment, and/or vessels.
References:	NOAA, 2019. Policy for the Assessment of Civil Administrative Penalties and Permit Sanctions NOAA Office of General Counsel – Enforcement Section. June 24, 2019. https://www.noaa.gov/sites/default/files/2023-06/Penalty-Policy-FINAL-June24-2019.pdf NOAA, 2023. Assessment of Civil Administrative Penalties. Prepared by A. Hattan, B. McTague, NOAA Office of General Counsel, Enforcement Section, Juneau, Alaska. 4 pp. https://meetings.npfmc.org/CommentReview/DownloadFile?p=a4a3373d-d23c-4ec5-9fa6-810d73c0acfc.pdf&fileName=PPT%20B3%20NOAA%20GCES%20Penalty%20Policy.pdf

[34] https://dps.alaska.gov/awt/safeguard#:~:text=Wildlife%20Safeguard's%20purpose%20is%20to,Troopers%20related%20to%20this%20program%3F
[35] http://touchngo.com/lglcntr/akstats/statutes/Title16/Chapter05.htm

11.	There shall be a framework for sanctions for violations and illegal activities of adequate severity to support compliance and discourage violations.
Statement of consistency to the RFM Fishery Standard	**The fishery continues to conform to the requirements of Fundamental Clause 11 of the RFM Fishery Standard**

7.9.4. Section D: Serious Impacts of the Fishery on the Ecosystem

7.9.4.1. Fundamental Clause 12. Impacts of the fishery on the ecosystem

12. Considerations of fishery interactions and effects on the ecosystem shall be based on the best scientific evidence available, local knowledge where it can be objectively verified, and a risk assessment-based management approach for determining most probable adverse impacts. Adverse impacts of the fishery on the ecosystem shall be appropriately assessed and effectively addressed.	
Summary of relevant changes:	Evidence viewed during the second surveillance audit confirms that the certified BSAI king and Tanner crab fisheries remain in conformity with RFM Fundamental Clause 12. There is in place a robust fisheries management system that appropriately and adequately considers fishery interactions and effects on the ecosystem (NPFMC, 2011). The BSAI crab fishery management system is based on the best available science while allowing for inputs from fishery participants and other stakeholders including the provision of local and/or traditional knowledge. The management system also incorporates risk-based approaches for determining the most probable adverse impacts of the fishery so that potentially adverse impacts of the fishery on the ecosystem are appropriately assessed and effectively addressed. Habitat protection areas, prohibited species catch (PSC) limits, and crab bycatch limits, are in place to protect important benthic habitat for crab and other resources and to reduce crab bycatch in the trawl and fixed gear groundfish fisheries. If PSC limits are reached in bottom trawl fisheries executed in specific areas, those fisheries are closed. The crab fisheries catch a small quantity of other species as bycatch. A limited number of groundfish, such as Pacific cod, Pacific halibut, and yellowfin sole are caught in the directed pot fishery as well as small amounts of invertebrates (gastropods and echinoderms). Such interactions are appropriately assessed and effectively addressed. As detailed in the following sections, results from the second surveillance audit indicate that there have been no significant changes since the last re-assessment of BSAI crab fisheries in how the fishery management system assesses and responds to ecosystem effects of the fisheries. <u>12.1 Impact of environmental factors on the target stock.</u> There are ongoing assessments of the impacts of environmental factors on target stocks and species belonging to the same ecosystem. NPFMC and NMFS regularly assess the impacts of environmental factors on BSAI crab stocks (see Crab SAFE Reports) and other species belonging to the same ecosystem (e.g., EBS Pacific Cod SAFE; Barbeaux *et al*., 2024). Ecosystem assessments for BSAI crab fisheries are updated annually in the BSAI Crab SAFE. In recent years, an Ecosystem and Socioeconomic Profile (ESP) has been introduced into the stock assessment process (Shotwell et al., 2023). ESPs have been prepared for BBRKC (Fedewa and Shotwell, 2023), EBS snow crab (Fedewa *et al*., 2024a), EBS tanner crab (Fedewa *et al*., 2024b), and SMBKC (Fedewa *et al*., 2020) for consideration in stock assessments. Additionally, the status of habitats and ecosystems are monitored within the broader framework of Alaska's large marine ecosystems and results are updated and published annually (e.g., Siddon, 2022, 2023; Ortiz and Zador, 2022, 2023). Collectively, these ecosystem assessments consider target stocks, associated or dependent species, and the relationship among populations in the ecosystem. In 2018, the Council approved the Bering Sea Fisheries Ecosystem Plan (FEP; NPFMC, 2019), thereby formalizing its commitment to ecosystem-based fisheries management (EBFM) of the Bering Sea. The Council has acknowledged that moving toward EBFM is an ongoing process and as new information or tools become available the Council will respond by improving the fishery management program. The BS FEP will serve as a framework for continued incorporation of ecosystem goals and actions in regional management. The BS FEP sits alongside the Fishery Ecosystem Plan already

12.	**Considerations of fishery interactions and effects on the ecosystem shall be based on the best scientific evidence available, local knowledge where it can be objectively verified, and a risk assessment-based management approach for determining most probable adverse impacts. Adverse impacts of the fishery on the ecosystem shall be appropriately assessed and effectively addressed.**

developed for the Aleutian Islands (NPFMC, 2007) and it augments ongoing efforts for monitoring ecosystems in the Alaska Region (e.g., Ortiz and Zador, 2023; Siddon, 2023).

Szuwalski *et al*. (2023a) studied the recent collapse of snow crab in the eastern Bering Sea and attributed declines to successive marine heatwaves in 2018 and 2019. Their work underscores the need to better understand how environmental factors may impact target stocks, particularly in the context of climate change.

CLIMATE CHANGE
Climate change has already had large impacts on the Bering Sea fisheries and ecosystem and impacts are expected to increase over the next decade, with largest changes and risks associated with warmest future scenarios (i.e., higher carbon emission scenarios; IPCC, 2022). Recent national and regional strategic evaluations have identified the immediate need for climate integrated management advice and information, and recent United States Government Accountability Office report to congressional committees (GAO-22-105132) identified two priority recommendations to (1) “publicly disseminate information on actions taken by the Regional Fishery Management Councils and NMFS' Atlantic Highly Migratory Species Division to enhance the climate resilience of federal fisheries” and (2) “identify and prioritize opportunities to enhance the climate resilience of federal fisheries… and develop a plan to implement them.” Among other actions, in 2022 NPFMC initiated a Climate Change Taskforce (CCTF) within its Bering Sea FEP to ascertain how “climate ready” the current management system is overall and to assist in augmenting existing management for improved climate resilience (Stram *et al*., 2022).

The CCTF held its final meeting in November 2024. Its primary recommendation was that the Council develop and implement a climate change workplan to increase resilience in fisheries management by more effectively incorporating climate related information and tools into decision making (CCTF, 2024). The CCTF final report identifies three key elements around which this workplan could be structured:

- Expand existing (and create new, where appropriate) inclusive processes, collaborations, and partnerships that facilitate inclusion of multiple knowledge systems in climate planning.
- Consider management tools and options focused on the inclusion of existing and emergent climate information.
- Establish a dedicated review group charged with reviewing and packaging climate information entering Council processes.

The Council has multiple concurrent efforts planned and underway to build climate resilience in the Council process. These include Inflation Reduction Act (IRA) funding and proposed policy and science actions, including the Programmatic Evaluation and work to improve the climate resilience of harvest control rules; the June 2024 Climate Scenarios Workshop and report, and the work-to-date and final report of the CCTF. Meanwhile, NMFS AFSC is undertaking work through the Climate, Ecosystems, and Fisheries Initiative (CEFI) to develop climate-informed tools and information products that can support the Council’s climate resilience planning.

12.2.1-3 Main and minor species: protection from adverse impacts.

12.	**Considerations of fishery interactions and effects on the ecosystem shall be based on the best scientific evidence available, local knowledge where it can be objectively verified, and a risk assessment-based management approach for determining most probable adverse impacts. Adverse impacts of the fishery on the ecosystem shall be appropriately assessed and effectively addressed.**
	The Council, NMFS and ADFG have established processes for the detection of potentially adverse impacts to non-target catch/associated species taken in BSAI crab fisheries. In addition, monitoring processes are in place to ensure that potentially adverse impacts to non-target catch/associated species do not arise in BSAI crab fisheries. ADFG implements a mandatory observer program for BSAI crab fisheries (Schwenzfeier *et al*., 2012). Non-target catches, including discards of target stocks (females, undersized males) and stocks other than the stock under consideration, are recorded in an observer database which is maintained by ADFG (for more details on observer sampling methods see Gaeuman, 2014). Observer results are provided regularly to stock assessment authors so that potential impacts are considered during annual stock assessment activities (e.g., NPFMC, 2024). Fishery management organizations have considered the most probable adverse impacts of BSAI crab fisheries on associated species (NMFS, 2004; Chilton *et al*., 2011). The pot gear used for crab in the BSAI is relatively selective and the consensus view among experts is that the primary associated species in the BSAI crab fisheries are non-retained crabs which are species managed under the Crab FMP. Females and sub-legal crabs which are brought up in pots with legal males may account for up to two thirds of the total catch (NMFS, 2004). Therefore, non-target crab species are designated "main associated species" in accordance with RFM guidance (i.e., those taxa contributing to the top 80% of total bycatch in the Bycatch Species Profile; see Global Trust, 2022 for further details). All removals and mortalities of FMP crabs - whether from crab fisheries, groundfish fisheries or scallop fisheries - are accounted for in annual stock assessment activities. Accordingly, these catches (including discards) are appropriately monitored and do not threaten these non-target species with serious risk of extinction, recruitment overfishing, or other impacts that are likely to be irreversible or very slowly reversible. If such impacts were to arise, effective remedial action would be taken. RFM guidance identifies "minor associated species" as those taxa contributing to the next 15% of total bycatch in the bycatch species profile (i.e., taxa representing between 80% and 95% of total bycatch; RFM, 2021). For BSAI crab fisheries, bycatch species which are designated as minor associated species (Global Trust, 2022) fall into four taxonomic groupings: • unidentified snails • Pacific cod • non-FMP crabs • brittle star, basket star and other echinoderms Pacific cod, Gadus macrocephalus, is a widely distributed and highly abundant representative of the greater groundfish community which is managed by NPFMC as a tier 3 stock in the Eastern Bering Sea and is thus adequately assessed elsewhere (Barbeaux *et al.,* 2024). Regarding the three invertebrate taxonomic groupings, NMFS (2004) concluded that gastropods and echinoderms comprise a major portion of the total biomass of the eastern Bering Sea and small losses due to pot bycatch would have little significance. In some cases, crab pot bycatch have become part of small, dedicated fisheries as for snails, octopus, and Korean hair crab. Minor losses of other invertebrates are not estimable but assumed to be relatively insignificant. In addition, the minor amount of these species caught as bycatch does not result in declines in species diversity because it does not cause a decline in any species abundance. From this information, NOAA Fisheries concludes that status quo has an insignificant effect on the population levels of benthic species caught as bycatch. During the surveillance audit, the assessment team saw no evidence of a significant change in the way BSAI crab fisheries interact with main and minor associated species. ADFG noted that it is possible, if not

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probable, that the likelihood of crab fishery impacts to BSAI ecosystems, including potential impacts to non-target catch/associated species, has declined in recent seasons owing to reduced fishing effort for crab.

12.2.4-5 ETP species: protection from adverse impacts.

Management objectives exist which seek to ensure that endangered species are protected from adverse impacts resulting from interactions with BSAI crab fisheries. All U.S. fisheries management, including that of BSAI crab fisheries, must be consistent with the MSA , the Marine Mammal Protection Act (MMPA) , and the U.S. Endangered Species Act (ESA) . Each of these acts establishes management guidelines, objectives, and legal protections for threatened and endangered species. During surveillance, ADFG noted that it is possible, if not probable, that the likelihood of crab fishery impacts to BSAI ecosystems, including potential impacts to ETP species, would be even further reduced owing to fishery closures for BBRKC and EBS snow crab stocks during recent seasons (M. Stichert, ADFG, pers. comm.).

SEABIRDS

The Coordinated Seabird Studies (CSS) at the Alaska Fisheries Science Center (AFSC) promotes the collection and use of seabird data in an ecosystem-based fisheries management framework (EBFM). The CSS recently released a Strategic Plan (Fitzgerald et al., 2023) which outlines recommended research, service, outreach, and publication priorities over the next 5 years 2022-2026.

NMFS provides annual estimates of seabird bycatch for the combined groundfish and halibut fisheries. NMFS reported one take of an ESA-listed seabird (endangered short-tailed albatross, *Phoebastria albatrus*) in the Pacific cod hook-and-line fishery in 2023. There were no reported takes of threatened spectacled eider (*Somateria fischeri*) or threatened Alaska breeding population of Steller's eider (*Polysticta stelleri*)) in 2023 in federal fisheries off Alaska (NMFS, 2024). In comparison to other gear types used in federal fisheries off Alaska, pot gear remains the gear type with the least amount of estimated seabird bycatch, representing an average of 2.8 percent of the total seabird bycatch from all gear types from 2011 through 2021 (range 0 to 13.4 percent). In recent years, there was no estimated seabird bycatch from pot gear (Tide and Eich, 2022) nor any reported bycatch of ESA-listed seabirds in BSAI crab traps (A. Olsen, pers. comm., 2024).

MARINE MAMMALS

Young *et al.* (2024) provide updated stock assessments for Alaska's marine mammals. The following sections summarize information relevant to two marine mammal species with some potential to interact with BSAI crab fisheries. The 2023 stock assessment of bowhead whale (Balaena mysticetus) Western Arctic Stock concludes that, based on currently available data, the minimum estimated mean annual mortality and serious injury rate incidental to U.S. commercial fisheries (0 whales) is not known to exceed 10% of the Potential Biological Removal or PBR (10% of PBR = 12) and, therefore, can be considered insignificant and approaching a zero mortality and serious injury rate. The authors note, however, there are key uncertainties in the assessment. Although there are few records of bowhead whales being killed or seriously injured incidental to commercial fishing, about 12.2% of harvested bowhead whales examined for scarring (59/485 records) had scars indicating line entanglement wounds (George *et al.,* 2017) and the southern range of the population overlaps with commercial pot fisheries (Citta *et al.,* 2014).

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	In the update of the stock status of humpback whale (*Megaptera novaeangliae kuzira*): Mexico-North Pacific Stock, Young *et al*. (2024) provide a summary of mortality and serious injury of humpback whales within the range of the Mexico-North Pacific stock for the years 2016-2020. Crab pot gear was not recorded as a cause of injury (0 whales). Nonetheless, as humpback whales are increasing their range and number further north through the Bering into the Chukchi and Beaufort (Stafford et al., 2024), entanglement in crab pot gear – a previously documented occurrence in the Bering Sea crab fishery - may become a concern in the future (A. Olson, pers. comm.). 12.2.6-8 Habitats: knowledge of essential habitats and protection from adverse impacts. In accordance with requirements of the MSA, management agencies have knowledge of essential fish habitat (EFH) for the BSAI crab stocks under consideration. The potential for fishery impacts on habitats is assessed through the EFH process. Management systems ensure that fishery impacts on EFH and on habitats that are highly vulnerable to damage by the fishing gear are avoided, minimized, or mitigated. Crab EFH was described in Appendix F of the Crab FMP (NPFMC, 2011). Amendment 49, approved on May 31, 2018 (Final Rule: 83 FR 31340), updated the description and identification of EFH, and updated information on adverse impacts to EFH based on the best scientific information available (NOAA Fisheries, 2018). In 2023, the Council revised the EFH sections of its FMPs to address the results of the EFH 5-year review (NPFMC, 2023)[36]. NOAA approved amendment 56 on July 15, 2024 (50 CFR Part 679)[37]. Amendment 56 updates the BSAI Crab FMP to include new species distribution models and maps, updated text descriptions, EFH fishing effects evaluations (Zaleski *et al*., 2024), a reference to the new Non-Fishing Effects Report (Limpinsel *et al*., 2023), and research priorities looking ahead (NOAA, 2024). The new BSAI Crab EFH maps are for all life history stages combined for summer distribution due to data availability for the species distribution model ensembles. No species were elevated for mitigation measures against fishing effects to EFH, though some species were highlighted with concerns around limited data or smaller areas to review (*e.g*., Petral Bank for AI red king crab)[38]. In summer of 2023, the NOAA ship *Okeanos Explorer* made a research cruise with the AFSC to perform deepwater mapping in the Aleutian Islands[39]. The primary goal of the cruise was to increase mapping coverage in unexplored regions off Alaska, with a focus on waters deeper than 200 m. Survey results are still pending (M. Zaleski, pers. comm.). NOAA presented an overview of its program objectives to the Council, noting the focus on deepwater habitats of the Aleutian Islands for 2023 (Hourigan and Coleman, 2023). Also, as part of a separate effort with relevance to deep sea fauna, NOAA recently published a guide to the corals of Alaska (Stone *et al.*, 2023). 12.2.9-10 Ecosystems: monitoring and protection from adverse impacts. NPFMC, NMFS and ADFG consider the most probable impacts of BSAI king crab fisheries on the ecosystem, assess and monitor those impacts, and where necessary take remedial actions to address adverse impacts if they should arise. The BSAI Crab Environmental Impact Statement (EIS; NMFS, 2004), Fishery Management Plan (FMP) for BSAI King and Tanner Crabs (NPFMC, 2011), and BSAI and

[36] https://meetings.npfmc.org/CommentReview/DownloadFile?p=22e72bde-9bf5-4a5e-a68c-6b2b9e71b797.pdf&fileName=C5%20Motion.pdf
[37] https://www.federalregister.gov/documents/2024/07/19/2024-15930/fisheries-of-the-exclusive-economic-zone-off-alaska-essential-fish-habitat-amendments
[38] https://www.fisheries.noaa.gov/s3/2024-04/bsai-crab-fmp-amd56.pdf
[39] https://oceanexplorer.noaa.gov/okeanos/explorations/seascape alaska/ex2303/welcome.html#:~:text=Expedition%20Summary,of%20Alaska%20and%20Aleutian%20Islands

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	AI Fishery ecosystem plans (FEPs; NPFMC, 2007, 2018) create a framework for monitoring ecosystem impacts as previously documented (Global Trust, 2022). During the second surveillance audit, the assessment team saw evidence for continuing conformity, which included: • Annual stock assessments as documented in Crab SAFE Reports for BSIA crabs (NPFMC, 2024[40]) • Preparation of annual ESPs for BSAI crabs (Fedewa and Shotwell, 2023; Fedewa *et al*., 2020, 2024a, b) • Publication of annual Alaska Ecosystem Status Reports (Siddon, 2023; Ortiz and Zador, 2023) • Reports from regular (approximately quarterly) Crab Plan Team meetings (e.g., CPT, 2024) • Results from ADFG Mandatory Crab Observer Program (*e. g*., Schwenzfeirer, 2012; Gaeuman, 2014) • Council protocol for local knowledge and traditional systems (NPFMC, 2023)[41] and • Recent climate planning efforts undertaken by NPFMC (NPFMC, 2024[42]) <u>12.3-4 Key prey species and dependent predators</u> The food web roles of the five BSAI crab stocks under consideration here are reasonably well understood and none are considered key prey species (see detailed evidence presented under Supporting Clause 12.3 in Mateo *et al*. (2022). The Council does not identify BSAI crab stocks as forage species for groundfish (e.g., see BSAI Groundfish FMP[43]), and no predators are known to have an obligate or dependent relationship (*sensu* Pikitch *et al.*, 2012) with BSAI crab stocks. Thus, available evidence indicates that the BSAI crab stocks under consideration here are not key prey species whose removal could adversely impact dependent predators (Chilton *et al*., 2011). During the second surveillance audit, technical experts affirmed that there has been no substantial change in our understanding of the ecological roles of the five BASI crab stocks, and that they are not key prey species in the food web. Nonetheless, mechanisms do exist within the Council process to establish outcome indicators consistent with achieving avoidance of severe adverse impacts on dependent predators. For example, the BSAI Groundfish FMP and Salmon FMP[44] both address potential impacts to dependent predators using outcome indicators. Thus, there are ongoing programs for monitoring of outcome indicators to ensure that adverse impacts to dependent predators do not arise. In addition, outcome indicators for crab predators are in place and used for ongoing monitoring programs as evidenced by the annual publication of stock assessment and fishery evaluation (SAFE) reports[45], marine mammal stock assessment reports (Young *et al*., 2024), and ecosystem status reports (Siddon, 2023; Ortiz and Zador, 2023). <u>12.5 Pollution and MARPOL</u> Surveillance audit results indicate that there have been no significant changes to the legal/regulatory framework for pollution in relation to BSAI crab fisheries. Laws and regulations based on the

[40] https://www.npfmc.org/library/safe-reports/
[41] https://www.npfmc.org/how-we-work/management-policies/
[42] https://meetings.npfmc.org/CommentReview/DownloadFile?p=9f2ae564-ef8f-477e-a855- 5ee4a5033edc.pdf&fileName=D1%20Action%20Memo.pdf
[43] https://www.npfmc.org/wp-content/uploads/BSAIfmp.pdf
[44] https://www.npfmc.org/wp-content/PDFdocuments/fmp/Salmon/SalmonFMP.pdf
[45] https://www.npfmc.org/library/safe-reports/

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	International Convention for the Prevention of Pollution from Ships (MARPOL 73/78) are in place and enforced. The US Senate ratified MARPOL and Congress implemented it by the Act to Prevent Pollution from Ships (APPS; 33 U.S.C. §§1905-1915) on October 21, 1980. The US EPA and USCG have established protocols for managing its enforcement[46]. To further facilitate enforcement, APPS contains a "whistle blower provision" - those who come forward with violations of APPS or MARPOL may be compensated with up to 50% of the monetary penalties that the U.S. Government receives from the guilty parties[47]. 12.6 Research on gear impacts In Alaska there is a great deal of research into the social and environmental impact of fishing gear and its impact on biodiversity and coastal fishing communities. This research is performed, promoted, or supported by public entities including NFMS-AFSC, NPFMC and NPRB, academic institutions such as the Institute of Social and Economic Research, University of Alaska[48], as well as private groups such as the Alaska Fisheries Development Foundation (AFDF)[49], Alaska Bering Sea Crabbers (ABSC)[50], and Bering Sea Fisheries Research Foundation (BSFRF)[51]. The Council initiated the formation of an Unobserved Fishing Mortality Working Group (UFMWG) in October 2023 with the following objectives: 1) Identify data sources, major data gaps, and assumptions to estimate unobserved mortality for stock assessments and to better understand temporal/spatial extent across fisheries and gear types; and 2) provide research priority recommendations and/or needed research projects. The UFMWG presented their recommendations to the Council in June of 2024[52]. The Council has paused the working group until further research is completed to inform the estimation of crab UFM. 12.7 Marine Protected Areas (MPAs) State and Federal management agencies and NPFMC have frequently used MPAs as management tools in Alaska. According to Brock (2015), 95 MPAs have been established in Alaska, covering a total area of 2,737,588 km^2 in four major ecoregions. Given the large number of MPAs, it is not surprising that specific conservation objectives vary from one MPA to another. However, most of Alaska's MPAs have been established with an aim to ensure the sustainability of fish stocks and fisheries, and/or to protect marine biodiversity and critical or sensitive habitats. For example, the NPFMC notes that vast areas of the North Pacific have been permanently closed to groundfish trawling and scallop dredging to reduce potential adverse impacts on sensitive habitat and to protect benthic invertebrates. These marine protected areas comprise a relatively large portion of the continental shelf, and in many respects serve as marine reserves. In addition, fishery closures established in nearshore areas to reduce interactions with Steller sea lions have ancillary benefits of reducing habitat impacts as well. The National Marine Protected Areas Center maintains a comprehensive geospatial database for MPAs that combines publicly available data with information from state and federal MPA programs.

[46] https://www.epa.gov/enforcement/marpol-annex-vi-and-act-prevent-pollution-ships-apps
[47] https://www.whistleblowers.org/stop-shipping-pollution/
[48] https://iseralaska.org/
[49] https://afdf.org/
[50] https://www.alaskaberingseacrabbers.org/science
[51] https://bsfrf.org/
[52] https://meetings.npfmc.org/CommentReview/DownloadFile?p=1490afe6-de8f-45c7-8f8f- 397fd118e370.pdf&fileName=D1%20UFMWG%20Report.pdf

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	An updated map of MPAs was presented in the BSAI Crab re-assessment report (Mateo *et al.,*2022). Also see the NMPAC website to view an interactive MPA Inventory for the Alaska region.
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12.	**Considerations of fishery interactions and effects on the ecosystem shall be based on the best scientific evidence available, local knowledge where it can be objectively verified, and a risk assessment-based management approach for determining most probable adverse impacts. Adverse impacts of the fishery on the ecosystem shall be appropriately assessed and effectively addressed.**
	Pikitch, E., Boersma, P.D., Boyd, I.L., Conover, D.O., Cury, P., Essington, T., Heppell, S.S., Houde, E.D., Mangel, M., Pauly, D., Plagányi, É., Sainsbury, K., and Steneck, R.S. 2012. Little Fish, Big Impact: Managing a Crucial Link in Ocean Food Webs. Lenfest Ocean Program. Washington, DC. 108 pp. http://www.lenfestocean.org/~/media/legacy/lenfest/pdfs/littlefishbigimpact_revised_12june12.pdf?la=en RFM. 2021. Responsible Fisheries Management Certification Program Guidance to Performance Evaluation for the Certification of Wild Capture and Enhanced Fisheries in North America, Version 2.1, January 2021. https://rfmcertification.org/wp-content/uploads/2021/06/AK-RFM-V2.1-GuidanceDraft-Jan-2021_Final.pdf Schwenzfeirer, M., M. Salmon, E. Evans, E. Henry, and L. Ward. 2012. Annual report of the onboard observer program for the Bering Sea and Aleutian Islands crab fisheries, 2011/2011. Pages 195-251 [In] Fitch, H., M. Schwenzfeier, B. Baechler, T. Hartill, M. Salmon, M. Deiman, E. Evans, E. Henry, L. Wald, J. Shaishnikoff, K. Herring, and J. Wilson. 2012. Annual management report for the commercial and subsistence shellfish fisheries of the Aleutian Islands, Bering Sea and the Westward Region's Shellfish Observer Program, 2010/11. Alaska Department of Fish and Game, Fishery Management Report No. 12-22, Anchorage. http://www.adfg.alaska.gov/fedaidpdfs/fmr12-22.pdf Siddon, E. 2022. Ecosystem Status Report 2022: Eastern Bering Sea, Stock Assessment and Fishery Evaluation Report, North Pacic Fishery Management Council. 227 pp. https://apps-afsc.fisheries.noaa.gov/REFM/docs/2022/EBSecosys.pdf Szuwalski, C.S., K. Aydin, E. J. Fedewa, B. Garber-Yonts, and M. A. Litzow. 2023. The collapse of eastern Bering Sea snow crab. Science, 19 Oct 2023, Vol 382, Issue 6668, pp. 306-310 https://www.science.org/doi/10.1126/science.adf6035 Tide, C. and Eich, A.M. 2022. Seabird Bycatch Estimates for Alaska Groundfish Fisheries: 2021. National Marine Fisheries Service. Alaska Regional Office. 2022 NOAA technical memorandum NMFS-F/AKR ; 26. DOI : https://doi.org/10.25923/01e2-3s52 Young, N.C. Brower, A.A., Muto, M.M., Freed, J.C., Angliss, R.P., Friday, N.A., Boveng, P.L., Brost, B.M., Cameron, M.F., Crance, J.L., Dahle, S.P., Fadely, B.S., Ferguson, M.C., Goetz, K.T., London, J.M., Oleson, E.M. ,Ream, R.R., Richmond, E.L., Shelden, K.E.W., Sweeney, K.L., Towell, R.G., Wade, P.R., Waite, J.M., and Zerbini, A.N. 2022. Alaska Marine Mammal Stock Assessments. Alaska Fisheries Science Center (U.S.). NOAA Technical Memorandum NMFS AFSC 474. DOI: https://doi.org/10.25923/ds2w-9545
Statement of consistency to the RFM Fishery Standard	The open NC for supporting clause 12.2.6 notwithstanding, the fishery otherwise continues to conform to the requirements of Fundamental Clause 12 of the RFM Fishery Standard

7.9.4.2. Fundamental Clause 13. Fisheries enhancement activities

13.	**Where fisheries enhancement is utilized, environmental assessment and monitoring shall consider genetic diversity and ecosystem integrity.**
Summary of relevant changes:	**Important Note:** Fundamental Clause 13 (and all underlying Clauses) is only applicable when the fishery under assessment utilizes fisheries enhancement techniques—if the fishery under assessment is not an enhanced fishery, this Section should be removed.
References:	
Statement of consistency to the RFM Fishery Standard	

8. Update on compliance and progress with non-conformances and agreed action plans

This section details compliance and progress with non-conformances and agreed action plans including:

a) A review of the performance of the Client specific to agreed corrective action plans to address non-conformances raised in the most recent assessment or re-assessment or at subsequent surveillance audits including a summary of progress toward resolution.
b) A list of pre-existing non-conformances that remain unresolved, new nonconformances raised during this surveillance, and non-conformances that have been closed during this surveillance.
c) Details of any new or revised corrective action plans including the Client's signed acceptance of those plans.
d) An update of proposed future surveillance activities.

8.1. Closed non-conformances

Non-conformance 2 (of 4)	
Clause:	6.3
Non-conformance level:	Minor
Non-conformance:	Guidance for current status states that "At a minimum, the stock is located above the midway point between the target (BMSY) and the limit (MSST = .5 BMSY) reference point. That means current biomass should be ~ 19.00 kt but it is well below that at ~ 15.00 kt. Therefore, a NC is raised against BBRKC.
Rationale:	Total catch (retained and bycatch mortality) increased from 7.6 kt in 2004/05 to 10.6 kt in 2007/08 but has decreased since then; total catch in 2019/20 was 2.22 kt.
Corrective Action Plan (CAP):	
Progress against the CAP:	At 1st surveillance in 2023 the assessment team found that the BBRKC stock was not approaching an overfished status and it was past the midway point between the limit and target reference points. A summary of results from the 2024 stock assessment for BBRKC is included in Section 7.4.3.
Non-conformance status:	Closed – following surveillance audit 1[53].

8.2. Progress against open non-conformances

Non-conformance 1 (of 3)	
Clause:	6.3
Non-conformance level:	Minor
Non-conformance:	The SMBKC stock was declared overfished on October 22, 2018. In order to comply with provisions of the Magnuson-Stevens Fishery Conservation and Management Act (MSA), a rebuilding plan must be implemented prior to the start of the 2020/2021 fishing season. The fishery was closed for the 2016/17 season and has remained closed each year since. In recent assessments, MSST has been steadily dropping from 1.9 kt in 2016/17 to 1.67 kt in 2019/20. MMB was 1.12 kt in 2020/21 – a very small increase from 1.06 kt in 2019/20 – but the stock remains below the MSST estimated for 2019/20.

[53] https://rfmcertification.org/wp-content/uploads/2024/03/BSAI-CRAB-RFM-1st-surveillance-2nd-cycle-recertification-3_8_2024-Form-9g-RFM-CSC-RFM-Surevillance-Assessment-Template-Issue-2-April-2021-003.pdf

Non-conformance 1 (of 3)	
Rationale:	Based on the best available information on the biology of the SMBKC stock and environmental conditions, the time necessary to rebuild the stock will exceed 10 years. The SMBKC stock has been in a low productivity phase since 1996 and population recovery will be greatly influenced by environmental conditions. Despite existing protections and frequent fishery closures, the stock has remained in this low productivity phase. Projections of stock recovery incorporate ecosystem constraints on productivity by forecasting recruitment as a function of stock size in model-recruit parameters. The estimated time for rebuilding under the Council's preliminary preferred alternative, taking into account the biology of the species and current environmental conditions, is 25.5 years. The contribution of the rebuilding plan to stock recovery would be additive to measures already in place that limit the effects of fishing activity on SMBKC. The directed fishery for SMBKC is managed under the State of Alaska harvest strategy and has been closed from the 2016/2017 season, prior to the stock being declared overfished. Measures to protect habitat and reduce bycatch potential include prohibitions on non-pelagic trawl gear in the St. Matthew Island Habitat Conservation Area (SMIHCA). Additionally, a 20 nm Steller sea lion closure area around the southern tip of Hall Island prohibits trawling, hook-and-line, and pot fisheries for pollock, Pacific cod, and Atka mackerel may help reduce SMBKC bycatch in those fisheries. Finally, State jurisdictional waters (0 to 3 nm from shore) surrounding St. Matthew, Hall, and Pinnacle Islands are closed to the taking of king and Tanner crab and to commercial groundfish fishing, further reducing the potential for SMBKC bycatch. See evidence for SC 6.3 (Section 9.3.3.3) for details of analyses related to the rebuilding plan. The "Extraordinary circumstances" provision of AK RFM Procedures 2 § 3.17 is used here as a basis for recommending carry over of the NC against SMBKC into this reassessment. The extraordinary circumstances being: (1) The NC was raised in the 2nd surveillance of the previous reassessment and 2 years is a very short time in which to observe a significant improvement in stock status; (2) Fishing pressure is not the sole contributor to the decline of this stock in recent years. Environmental/ecosystem changes associated with ocean warming appear to be impeding recruitment and stock recovery; (3) The fishery has been closed and will remain closed until there is improved recruitment.
Corrective Action Plan (CAP):	The client's corrective action plan (CAP) is presented in full in the 2nd surveillance audit of the 1st certification cycle (see footnote 5 included in Section 8.1). **STMTBKC Corrective Action Plan - update 03/25/25** **Item #1 - Support of and attention to STMTBKC rebuilding plan** The terms of the rebuilding plan for this stock remain in effect, and the CPT current stock priorities reflect the assessment is biennial and was completed in October of 2024. The current stock status is the same in 2024 (September CPT) as 2023 , and although overfishing did not occur, the stock is not rebuilt. The updated status on this stock projects a small increase for biomass (improving) to be above MSST in

Non-conformance 1 (of 3)	
	2024/25 but continues to reflect some uncertainty about its persisting low levels. The September 2024 updated assessment addressed some of this uncertainty resulting from required changes in the Bering Sea trawl survey that dropped 'corner stations' which impacts abundance and biomass estimation (negatively) for this stock. The SSC recommended further evaluation of this effect, and we will track this evaluation and report as updates occur. **Item #2 - Support of and Participation in SMBKC Stock Assessment - GMACs support & State Survey** The planned stock assessment model was completed in GMACs in September 2024. The model is performing well with capabilities to evaluate data sources, points of uncertainty, progress within rebuilding goals, and status updates that provide management advice across the years without assessment updates. The assessment took into account the 2022 state pot survey data – which had relatively high CPUE for SMBKC, and this was important in the selection of final model outcomes. The CPT chairs noted to the SSC that with NMFS trawl corner stations dropping, there is increasing importance of the state's triennial pot survey for this stock. The upcoming ADF&G plans for the SMBKC pot survey are intended to be in collaboration with the crab industry – through BSFRF. Current pot survey strategy includes a primary option to have BSFRF administer the charter for the survey. As such, we will provide an industry perspective update of results from the 2025 SMBKC pot survey at the next surveillance. **Item #3 - Record keeping and reporting for SMBKC stock - bycatch monitoring** The update for the third component of this action plans is to again report there was no substantial SMBKC bycatch occurring in crab or non-crab fisheries in the SMBKC management area as reported in the CPT summary report which stated "there has been little bycatch of SMBKC in other crab fisheries in the past decade, and little bycatch in trawl fisheries, with some bycatch occurring in fixed gear (pot) fisheries" (CPT September 2024). As we noted in prior CAP updates, the spatial overlap of the SMBKC area with other directed crab fisheries is mostly with Bering Sea opilio – and since two opilio season closures and one small season have occurred recently, the main potential pot fishery impact is diminished. We are continuing to monitor the seasonal progression of crab bycatch through the existing NMFS catch reporting system and will report to assessors at the next update about any anomalies.
Progress against the CAP:	The SMBKC is on a biennial assessment. Results from the 2024 assessment are summarised in Section 7.4.2. The SSC chose model 24.1 results as the basis for OFL determination. It estimates mature male biomass in 2023/24 below the MSST, indicating that the stock remains overfished. A directed fishery closure has been in place since the 2016/17 season and estimated total bycatch has remained well below the overfishing level (OFL), hence overfishing has not occurred. The primary factors limiting stock rebuilding have been identified as warm bottom conditions, low pre-recruit biomass, and northward shifts in predator populations,

Non-conformance 1 (of 3)	
	rather than fishing mortality. The aim of the rebuilding plan is to maintain a low rate of fishing mortality while awaiting ecosystem conditions conducive to stock rebuilding. Estimated MMB remains well below BMSY and as stated in the Crab FMP, when a rebuilding plan is required, the minimum standard for a rebuilding target is BMSY. Projections of the stock 10 years into the future based on the recent recruitment period (1999 to 2023) show limited stock growth. The outlook for recruitment in the near future is pessimistic and abundance relative to the proxy BMSY is low, although improved somewhat over recent years (link to 2024 SMBKC SAFE report is provided in Section 7.4.2). **The assessment team reviewed actions taken by the client described in CAP updates provided above and client progress since the 1st surveillance audit of the 3rd certification cycle is judged to be "on target".**
Non-conformance status:	This non-conformance remains open as of the 2nd audit – Corrective Actions in place to be reviewed annually at surveillance audits.

Non-conformance 3 (of 3)	
Clause:	6.3
Non-conformance level:	Minor
Non-conformance:	The eastern Bering Sea snow crab population was declared overfished in October 2021 and the directed fishery was closed for the 2022 season. The Council developed a rebuilding plan to be implemented prior to the start of the 2023/2024 fishing season. The projected time for rebuilding the EBS snow crab stock, taking into account the biology of the species and current environmental conditions, is 6 years.
Rationale:	Observed mature male biomass (MMB) slowly increased after 1999, and the stock was declared rebuilt in 2011 when estimated MMB at mating was above B35%. However, after 2011, the stock declined and the observed MMB at the time of survey dropped to 63.21 kt in 2016. Recently, MMB was increasing again as a large recruitment moved through the size classes, but that recruitment has since disappeared and the observed mature male biomass at the time of the 2022 survey was 37.5 kt, a new all-time low and 40% less than the previous all-time low seen in the 2021 survey. On October 19, 2021, NMFS determined and notified the Council that the EBS snow crab stock was overfished. To comply with provisions of the Magnuson-Stevens Act, the Council developed a rebuilding plan to be implemented prior to the start of the 2023/2024 fishing season. On February 2023, the Council chose a rebuilding plan for EBS snow crab that will allow bycatch removals and an opportunity for directed harvest during rebuilding

Non-conformance 3 (of 3)	
	if estimates of stock biomass are sufficient to open the fishery under the State's snow crab harvest strategy. The rebuilding plan is consistent with the Magnuson-Stevens Act and with National Standard 1 Guidelines on time for rebuilding, specifically rebuilding within a time (Ttarget) that is as short as possible, taking into account the status and biology of any overfished stocks of fish, the needs of fishing communities, recommendations by international organizations in which the United States participates, and the interaction of the overfished stock of fish with the marine ecosystems. This rebuilding plan will allow directed fishing pursuant to the State harvest strategy and may provide important economic opportunities for harvesters, processors, and Alaska communities. Maintaining this economic opportunity for a limited directed commercial fishery under the State harvest strategy is important for harvesters, processors, and communities, particularly during this time when the majority of commercial crab stocks are in a state of decline and future openings are likely to be limited. Under the Magnuson-Stevens Act, the time period specified for rebuilding a fishery generally should not exceed 10 years unless the biology of the stock or environmental conditions dictate otherwise. The projected time for rebuilding the EBS snow crab stock, taking into account the biology of the species and current environmental conditions, is 6 years. The main driver in the speed of rebuilding is likely related to recruitment and the ecosystem conditions that allow for increased recruitment into the population. Uncertainty surrounding recruitment and mortality under current ecosystem conditions is expected to heavily influence the rate at which the stock is able to rebuild under the projection parameters. Fishing mortality under the State's current harvest strategy is expected to have only insignificant or minimal impacts on the rate of rebuilding. Amendment 53 adds Section 6.2.3 to the Crab FMP to include the rebuilding plan for EBS snow crab. Under the rebuilding plan, ecosystem indicators developed for the stock will be monitored during rebuilding. The NMFS EBS bottom-trawl survey provides data for the annual assessment of the status of crab stocks in the BSAI, including EBS snow crab, and will continue throughout rebuilding. The Council's BSAI Crab Plan Team will report stock status and progress towards the rebuilt level in the Stock Assessment and Fishery Evaluation (SAFE) Report for the King and Tanner Crab Fisheries of the BSAI. Additionally, the State and NMFS monitor directed fishery catch and bycatch of snow crabs in other fisheries. When the fishery is open, the State requires full observer coverage (100 percent) for catcher/processors and partial coverage (30 percent) for catcher vessels participating in the crab fishery. Observers monitor harvest at sea and landings by catcher vessels and shoreside processors. The State reports the total harvest from the commercial crab fishery, and that report will be included annually in the SAFE Report. The contribution of the rebuilding plan's assessment and monitoring to stock recovery will be additive to measures already in place that limit the effects of fishing activity on EBS snow crab.

Non-conformance 3 (of 3)	
Corrective Action Plan (CAP):	The CAP for this non-conformance was put in place as part of the 1st audit in 2023 and is included as Section 8.1.4 of that report (link included in 8.1 above). **Bering Sea Opilio Corrective Action Plan - update 03/25/25** **Item #1 - Compilation of recent collaborative workshop information to share with assessors** The BSFRF (BSCCG Client entity) convened two hybrid snow crab workshops in January and December of 2021. There have been some notable publications that have drawn from related material that the assessment team has seen and reviewed for this update. To avoid some likely redundancy, we have included in this update (email attachments), the summary overview from both of these initial events – and will make further elements of both workshops available upon request to the assessment team. These workshop findings are unpublished - but if there are specific items of interest we can provide those. **Item #2 - Sharing of information/summaries of 2024 international workshop on snow crab** The BSFRF (BSCCG Client entity) co-hosted a meeting in St. John's, NL (CA) with DFO April 29 – May 1, 2024. The workshop agenda material is provided in this update (email attachment). We have access to presentations and related items that were part of the workshop – we can make those available on request to the assessment team. This workshop outcomes, findings, and management advice are currently in press (Gordon Kruse lead for BSFRF, expected to be published with ADF&G Special Report Series) and we will provide those to the assessors also when completed. **Item #3 - Support of and attention to Bering Sea opilio rebuilding plan** The terms of the rebuilding plan for this stock are in effect, and the assessors are aware that the stock is not rebuilt, is not experiencing overfishing, and reached a level that would support a small commercial fishery. Although the NMFS summer survey abundance estimates showed some positive signals for recovery, the stock assessment's more complete review was more uncertain. The expectations for the stock are still greatly dependent on annual survey data from the NMFS Bering Sea summer trawl survey, along with insight from the assessment completed each September. The client group is involved in collaborative opilio research as part of expanding federal fishery disaster relief funded research. Current plans include a specific, additional opilio pot and trawl sampling project in the summer of 2025, in development from pilot data collected in the summer of 2024. The information is not intended to directly inform assessment model status but will likely improve understanding of stock distribution during the current period of low status and early recovery. We will report findings of this work through the CPT, collaborative research partners, and to the assessment team when the information is available. **Item #4 - Support of and Participation in Opilio Stock Assessment - GMACS support & other modeling reviews**

Non-conformance 3 (of 3)	
	The update we can provide to the assessors is that modeling efforts for the Bering Sea snow crab stock are significantly challenging. The assessment is executed within a GMACs model structure now, but specifications from the model continue with a high level of review from the CPT, SSC, and others and often meet conflicting perspectives on the appropriate path forward. The industry is continuing to offer support and find ways to help improve the assessment, with continued interest to support sustainability for snow crab through the assessment. We can report to the assessment team as new industry support details become available. **Item #5 - Record keeping and reporting for Bering Sea opilio stock - bycatch monitoring** The update for the final component of this action plans is to continue to track bycatch and provide updates on any substantial changes in opilio bycatch occurring in crab or non-crab fisheries in the management area as reported by the September CPT. To our knowledge, there has been no new substantial opilio stock bycatch that we are aware of. The reporting of this will also occur as part of the rebuilding plan monitoring, total mortality estimation within the assessment, and CPT-level reporting on bycatch accounting for all crab stocks. For this update, our plans to share information remain the same – the September CPT report link for 2024 is updated above. Results from the 2024 assessment are summarised in Section 7.4.1. Noting the uncertainty in mating dynamics, the SSC disagreed with the author and CPT and instead recommended using the Tier 3 model 24.1a, with $F_{35\%}$ and $B_{35\%}$ as proxies for MSY to set the OFL. The SSC further recommended a buffer of 65% between the OFL and ABC, reflecting the potential for very high fishing mortality rates on larger crab if the full OFL were removed from the stock. This buffer is larger than last year and the SSC based the increase on uncertainty in the reproductive capacity of small males, continued concern over issues with the Tier 3 model, the recent large mortality event from which the stock has yet to recover, and the potential for persistent truncation of the size/age structure of male crab. The SSC noted that the use of such a large buffer is a temporary solution, pending additional biological and assessment research (see link provided in non-conformance 1 of Section 8.1.2 above). Based on the SSC recommended model, overfishing is not occurring for snow crab, and the stock is not currently overfished (MMB is above the minimum stock size threshold) but will remain under a rebuilding plan until it has rebuilt to the B_{MSY} level. Accordingly, after two consecutive closed seasons (2022-23 and 2023-24), the fishery was re-opened for the 2024-25 season with a small TAC of 2,140 t which is in accordance with the ADFG Guideline Harvest Level (GHL) that is based on estimated total mature biomass.

Non-conformance 3 (of 3)	
	The recent Bering Sea warm stanza (2014–2021) included unprecedented low sea ice extents in winters 2017/2018 and 2018/2019 with near nonexistent cold pool extents in summers 2018 and 2019. This unprecedented warming resulted in a mass die off due to starvation of a strong year class of undersize snow crab (Szuwalski et al 2023; Litzow et al 2024). The lack of thermal barrier also resulted in northward distributional shifts of groundfish and crab stocks that potentially impacted the food web dynamics and carrying capacity of the northern Bering Sea ecoregion. Since 2021, oceanographic metrics (i.e., sea ice extent, sea surface and bottom temperatures) have cooled to near average based on respective time series. While the summer 2023 cold pool was of moderate extent and among the largest of the past several years, it was significantly below the large cold pool extents that were common prior to the recent warm stanza. The areal extent of the cold pool in the eastern Bering Sea was just below the time series average in 2024 and 12.7% smaller than 2023.[54] Along with the recent cooling, juvenile snow crab energetic condition has been high relative to the dramatic decline in condition during the 2018-19 population collapse. Also, there have been southward shifts in the centroids of mature male abundance, juvenile snow crab have occupied temperatures < 1°C, and there has been reduced Pacific cod predation, which are consistent with the return of cold water habitat critical for stock rebuilding and recruitment. In addition, a high proportion (90%) of mature females with full clutches suggests increased reproductive capacity despite depressed large male abundance and a heavily female-biased operational sex ratio (Fedewa et al 2024). After the recent population collapse, some sign of small snow crab crab has been observed in the survey and this year's (2024) observed immature female biomass in the survey was the highest on record (link to 2024 EBS snow crab SAFE report is provided in Section 7.4.1). The foregoing ecosystem considerations provide some positive signals for rebuilding this stock. **The assessment team reviewed actions taken by the client described in CAP updates provided above and client progress since the 1st surveillance audit of the 3rd certification cycle is judged to be "on target".**
Progress against the CAP:	Results from the 2024 assessment are summarised in Section 7.4.1. Noting the uncertainty in mating dynamics, the SSC disagreed with the author and CPT and instead recommended using the Tier 3 model 24.1a, with $F_{35\%}$ and $B_{35\%}$ as proxies for MSY to set the OFL. The SSC further recommended a buffer of 65% between the

[54] https://www.fisheries.noaa.gov/resource/data/ecosystem-status-report-2024-eastern-bering-sea

Non-conformance 3 (of 3)	
	OFL and ABC, reflecting the potential for very high fishing mortality rates on larger crab if the full OFL were removed from the stock. This buffer is larger than last year, and the SSC based the increase on uncertainty in the reproductive capacity of small males, continued concern over issues with the Tier 3 model, the recent large mortality event from which the stock has yet to recover, and the potential for persistent truncation of the size/age structure of male crab. The SSC noted that the use of such a large buffer is a temporary solution, pending additional biological and assessment research (see link provided in non-conformance 1 of Section 8.1 above). Based on the SSC recommended model, overfishing is not occurring for snow crab, and the stock is not currently overfished (MMB is above the minimum stock size threshold) but will remain under a rebuilding plan until it has rebuilt to the B_{MSY} level. Accordingly, after two consecutive closed seasons (2022-23 and 2023-24), the fishery was re-opened for the 2024-25 season with a small TAC of 2,140 t which is in accordance with the ADFG Guideline Harvest Level (GHL) that is based on estimated total mature biomass. The recent Bering Sea warm stanza (2014–2021) included unprecedented low sea ice extents in winters 2017/2018 and 2018/2019 with near non-existent cold pool extents in summers 2018 and 2019. This unprecedented warming resulted in a mass die off due to starvation of a strong year class of undersize snow crab (Szuwalski *et al*., 2023; Litzow *et al*., 2024). The lack of thermal barrier also resulted in northward distributional shifts of groundfish and crab stocks that potentially impacted the food web dynamics and carrying capacity of the northern Bering Sea ecoregion. Since 2021, oceanographic metrics (i.e., sea ice extent, sea surface and bottom temperatures) have cooled to near average based on respective time series. While the summer 2023 cold pool was of moderate extent and among the largest of the past several years, it was significantly below the large cold pool extents that were common prior to the recent warm stanza. The areal extent of the cold pool in the eastern Bering Sea was just below the time series average in 2024 and 12.7% smaller than 2023.[55] Along with the recent cooling, juvenile snow crab energetic condition has been high relative to the dramatic decline in condition during the 2018-19 population collapse. Also, there have been southward shifts in the centroids of mature male abundance, juvenile snow crab has occupied temperatures < 1°C, and there has been reduced Pacific cod predation, which are consistent with the return of cold water habitat critical for stock rebuilding and recruitment. In addition, a high proportion (90%) of mature females with full clutches suggests increased reproductive capacity despite depressed large male abundance and a heavily

[55] https://www.fisheries.noaa.gov/resource/data/ecosystem-status-report-2024-eastern-bering-sea

Non-conformance 3 (of 3)	
	female-biased operational sex ratio (Fedewa *et al*., 2024). After the recent population collapse, some sign of small snow crab has been observed in the survey and this year's (2024) observed immature female biomass in the survey was the highest on record (link to 2024 EBS snow crab SAFE report is provided in Section 7.4.1). The foregoing ecosystem considerations provide some positive signals for rebuilding this stock.
Non-conformance status:	This non-conformance remains open as of the 2nd audit – Corrective Actions in place to be reviewed annually at surveillance audits.

Non-conformance 2 (of 3)	
Clause:	12.2.6, Habitat Scoring Element 1
Non-conformance level:	Minor
Non-conformance:	Information presented to the assessment team was not sufficient to confirm that the effects of the AIGKC fishery on sensitive habitats is reduced to a minimum percentage of the total area.
Rationale:	There was not enough evidence to substantiate that the AIGKC Unit of Certification fulfils Habitat Assessment Element 1 of Supporting Clause 12.2.6. More specifically, the assessment team was unable to substantiate: • the spatial footprint (i.e., total area in Km2 or nm2) of the AIGKC fishery on sensitive marine habitats (e.g., based on maps of fishing effort or other data); • the general range of sensitive habitat types (e.g., biogenic habitats) affected and unaffected by the spatial footprint of the AIGKC fishery; and • the percentage area of overlap of the AIGKC fishery with known sensitive habitats including areas known to be rich in structural epifauna/HAPC biota. Note: In the Aleutian Islands, groups considered to be HAPC biota include sea pens, sea whips, corals, anemones, and sponges (RFM Guidance, AK RFM Standard Version 2.1). Also see Global Trust (2022) for evidence considered in the scoring rationale for Supporting Clause 12.2.6.
Rationale:	There was not enough evidence to substantiate that the AIGKC Unit of Certification fulfils Habitat Assessment Element 1 of Supporting Clause 12.2.6. More specifically, the assessment team was unable to substantiate: • the spatial footprint (i.e., total area in Km2 or nm2) of the AIGKC fishery on sensitive marine habitats (e.g., based on maps of fishing effort or other data); • the general range of sensitive habitat types (e.g., biogenic habitats) affected and unaffected by the spatial footprint of the AIGKC fishery; and • the percentage area of overlap of the AIGKC fishery with known sensitive habitats including areas known to be rich in structural epifauna/HAPC biota. Note: In the Aleutian Islands, groups considered to be HAPC biota include sea pens, sea whips, corals, anemones, and sponges (RFM Guidance, AK RFM Standard Version 2.1). Also see Global Trust (2022) for evidence considered in the scoring rationale for Supporting Clause 12.2.6.

Non-conformance 2 (of 3)	
Corrective Action Plan (CAP):	Note that during the previous (1st) surveillance audit, the assessment team reviewed the status of the client's updated corrective action plan and judged progress to be "on target" (Global Trust, 2024). During the present (2nd) surveillance audit, the client provided the following update on progress against the corrective action plan.

Wed, Dec 11, 8:56 AM

to me, Ivan, Jerry, Cory
Hello Ivan, Wes, and Jerry,

Here are potential action steps for refining the understanding of estimated overlap between the AIGKC fishery and coral habitat. I'd propose to report back to you prior to the May 2025 Crab Plan Team (May 12-16), and potentially much sooner than that (relative to the completion of some current research deadlines).

1) Refine the estimate of coral habitat as presented in last year's summary update. This will involve some coordination with Dr. Scott Smeltz at Alaska Pacific University (APU) in coordination with Mr. Cory Lescher (cc'd on this email) who will be assisting me and working directly with the Aleutian King Crab Research Foundation. We need to more completely understand how Dr. Smeltz generated his estimate and if a substantial adjustment is warranted.

2) Update the estimation of the fishery footprint, with the latest CPUE and pot lift information that comes directly from the Alaska Department of Fish and Game. This would include obtaining the lates fishery (seasonal) data and updating an average number of pots lifted, then calculating the footprint of the total of all pot lifts. A final step would be to estimate a range for the fishery footprint by applying a scalar to account for pots moving during retrieval and also for movement of the groundline that tethers the longlined pots.

3) Updating the review of incidence of coral or other sensitive species presence in bycatch data. This would provide a review of any substantial changes from the approach we've taken over time to review the proportion of observed pots and the associated bycatch of sensitive species.

If there are other elements that you would advise to add, or revise some component of the above, please let me know.

Talk to you soon on our call,

Scott Goodman

Non-conformance 2 (of 3)	
Progress against the CAP:	The assessment team reviewed the actions taken by the client since the last surveillance audit, including those described in the updated CAP. Client progress is judged to be "on target."
Non-conformance status	Open – Corrective Actions in place to be reviewed annually at surveillance audits.

8.3. New non-conformances

There are no new non-conformances raised in this 2nd surveillance.

8.4. New or revised corrective action plans

Non-conformance 3 – Habitat Scoring Element 1, AIGKC UOC.

The assessment team reviewed the client's updated corrective action (presented in section 8.2 above) and judged progress to be "on target.

8.5. Proposed surveillance activities

The next assessment will be the 3rd surveillance assessment which will commence for the anniversary of the re-certification in April 2012. This 3rd surveillance will examine progress made in fulfilling the milestones of the corrective action plans.

9. Recommendations for continued certification

9.1. Certification Recommendation

Following this surveillance audit, the Assessment Team recommends that the fishery be awarded continuing certification against RFM Certification Program Fisheries Standard Version 2.1.

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11. Appendices

11.1. Appendix 1 – Assessment Team Bios

11.1.1. Assessment Team Bios

Based on the technical expertise required to carry out this assessment, an Assessment Team was selected as follows.

Ivan Mateo, Ph.D., Lead Assessor

Dr. Ivan Mateo has over 25 years' experience working with natural resources population dynamic modelling. His specialization is in fish and crustacean population dynamics, stock assessment, evaluation of management strategies for exploited populations, bioenergetics, ecosystem-based assessment, and ecological statistical analysis. Dr. Mateo received a Ph.D. in Environmental Sciences with Fisheries specialization from the University of Rhode Island. He has studied population dynamics of data limited economically important species as well as candidate species for endangered species listing from many different regions of the world such as the Caribbean, the Northeast US Coast, Gulf of California, and Alaska. He has done research with NMFS Northeast Fisheries Science Center Ecosystem Based Fishery Management on bioenergetics modelling for Atlantic cod. Dr. Mateo also worked as an environmental consultant in the Caribbean doing field work and looking at the effects of industrialization on essential fish habitats and for the Environmental Defense Fund developing population dynamics models for data poor stocks in the Gulf of California. Dr. Mateo worked as National Research Council post-doctoral research associate at the NOAA National Marine Fisheries Services Ted Stevens Marine Research Institute on population dynamic modelling of Alaska sablefish and early life history/recruitment dynamics of Pacific Ocean perch.

Gerald (Jerry) P. Ennis, Ph.D., Assessor 1.

Following undergraduate and graduate degrees at Memorial University of Newfoundland in the 1960s, Dr**.** Ennis completed a Ph.D. in marine biology at University of Liverpool in the early 1970s. He retired in 2005 following a 37-year research career with the Science Branch of the Department of Fisheries and Oceans. His extensively published work has focused primarily on lobster fishery and population biology and on various aspects of larval, juvenile and adult lobster behavior and ecology in Newfoundland waters. Throughout his career, Dr. Ennis was heavily involved in the review and formulation of scientific advice for management of shellfish in Atlantic Canada as well as the advisory/consultative part of managing the Newfoundland lobster fishery. In the past decade Jerry has been involved in dozens of crab, lobster and groundfish MSC assessment audits in the US and Canada**.**

Wesley Toller, Ph.D., Assessor 2

Dr. Wesley Toller has an extensive background in fisheries management and habitat conservation. As owner and operator of his own consulting business since 2010, has worked closely with a number of leading certification schemes including the Marine Stewardship Council (MSC) and Aquaculture Stewardship Council (ASC) to develop and improve processes for auditing and accreditation of sustainability standards. He previously worked as a program manager with Accreditation Services International (ASI) where he helped establish the company's MSC Program. Dr. Toller has an in-depth knowledge of ISO requirements and international best practices that pertain to eco-labelling. He has a detail-oriented work style and wide-ranging interests. Dr. Toller has experience in many subject areas within the field of sustainability and specializes in sustainable use of fishery resources in the field of fisheries management and marine science. Dr. Toller received his doctorate in biological sciences from the University of Southern California. He currently resides in Seattle.