

Certified Seafood International (CSI)



US Alaska Salmon Commercial Fisheries

Full Assessment Report

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Foreword

The Certified Seafood International (CSI) Certification program is a third-party sustainable seafood certification program for wild capture fisheries owned by the Certified Seafood International (CSI) Inc led by a diverse board of seafood and sustainability industry experts.

The Certified Seafood International (CSI) program represents the latest stage in the evolution of the Alaska Responsible Fisheries Management (RFM) Program, which began in 2010 as a credible, ISO-based third-party certification system for sustainable wild-capture fisheries. Developed by the Alaska Seafood Marketing Institute (ASMI), the RFM Program was grounded in the UN FAO Code of Conduct for Responsible Fisheries and Eco-labelling Guidelines and operated under two core standards to ensure responsible practices and traceability.

In 2020, ownership of the RFM Program transitioned to the Certified Seafood Collaborative (CSC), a nonprofit organization focused on expanding the program to include other North American fisheries outside the State of Alaska while improving efficiency and reducing costs. This marked a key step in broadening the program's reach and impact.

In 2025, the program advanced further by transferring its name and assets to Certified Seafood International (CSI), a U.S.-based organization structured as a nonprofit and currently applying for 501(c) status nonprofit. This transition supports the program's global expansion, offering a cost-effective, credible certification option for wild-capture fisheries worldwide and reinforcing its commitment to responsible seafood sourcing on an international scale.

The Certified Seafood International Responsible Fisheries Management (RFM) Fisheries Standard Version 2.2, October 2024, is the current Fisheries Standard in effect for Certified Seafood International. All previous RFM fishery certifications remain current and will receive full recognition from CSI until either the next full reassessment or April 2, 2028 (whichever is later) to transition to the new CSI Fisheries Standard

The Certified Seafood International 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 CSI program may be found at: <https://csicertified.org/>

1 Contents

Foreword	2
1 Contents.....	3
1.1 List of Figures.....	8
1.2 List of Tables	8
2 Glossary	9
3 Executive Summary.....	11
3.1 Reassessment process	11
3.2 Main strengths and weaknesses of the fishery	12
3.3 Assessment Team Details	13
3.4 Recommendation of the Team with respect to Certification.....	13
3.5 Details of Applicable CSI Documents.....	13
4 Fishery Applicant Details.....	14
5 Units of Assessment and Units of Certification.....	15
5.1 Units of Assessment	15
5.2 Units of Certification.....	16
6 Background to the Fishery.....	17
6.1 Species Biology	17
6.2 Fishery Location and Method	19
6.3 Fishery Management History and Organization	23
State and Federal Management Regimes	24
6.3.1 ADFG and Board of Fisheries (BOF) Functions.....	25
ADFG Commercial Fisheries Division Functions.....	25
The Board of Fisheries (BOF)	26
6.3.2 Coastal Management Framework for Alaska Salmon Habitat Conservation	27
Alaskan Department of Environmental Conservation (ADEC)	27
Alaska Department of Fish and Game (ADFG)	27
Alaskan Department of Natural Resources (ADNR)	27
ADNR Office of Project Management and Permitting (OPMP)	27
U.S. Fish and Wildlife Service (USFWS)	27
Bureau of Ocean Energy Management (BOEM)	28
6.3.3 Federal Subsistence Management Program.....	28
6.4 Stock Assessment Activities	30
Escapement Goals.....	30
6.5 Historic Biomass and Removals in the Fishery	31
6.6 Economic Value of the Fishery	33
6.7 Overview of the Alaska Salmon Hatchery Program.....	37
6.7.1 Hatchery Program History.....	37
6.7.2 Hatchery Production.....	37
6.7.3 Hatchery Policies	40
6.7.4 Permitting and Planning Procedures.....	41
6.7.5 Hatchery Values.....	43
6.7.6 Hatchery Management	43
6.7.7 Hatchery Contribution to Fisheries	45
7 Assessment Process	46
7.1 Scoring.....	46
7.1.1 Evaluation Parameters.....	46
7.1.2 Numerical Scoring based on Evaluation Parameters	46

7.1.3	<i>Confidence Ratings and Non-conformances</i>	47
7.1.4	<i>Overall Assessment Scoring</i>	47
7.2	<i>Consultation Meetings</i>	48
8	<i>Summary of Assessment Outcomes</i>	52
8.1	<i>Assessment Outcomes by Clause</i>	52
8.2	<i>Certification Recommendation</i>	55
8.3	<i>Certification Determination</i>	55
9	<i>Assessment Outcomes</i>	56
9.1	<i>Topics that will trigger immediate assessment failure</i>	56
9.2	<i>Section A: The Fisheries Management System</i>	57
9.2.1	<i>Fundamental Clause 1. Structured and legally mandated management system</i>	57
9.2.1.1	Supporting Clause 1.1.	57
9.2.1.2	Supporting Clause 1.2.	59
9.2.1.3	Supporting Clause 1.2.1.	61
9.2.1.4	Supporting Clause 1.3.	62
9.2.1.5	Supporting Clause 1.3.1.	64
9.2.1.6	Supporting Clause 1.4.	65
9.2.1.7	Supporting Clause 1.4.1.	66
9.2.1.8	Supporting Clause 1.5.	67
9.2.1.9	Supporting Clause 1.6.	69
9.2.1.10	Supporting Clause 1.6.1.	70
9.2.1.11	Supporting Clause 1.7.	71
9.2.1.12	Supporting Clause 1.8.	72
9.2.1.13	Supporting Clause 1.9.	74
9.2.2	<i>Fundamental Clause 2. Coastal area management frameworks</i>	75
9.2.2.1	Supporting Clause 2.1.	75
9.2.2.2	Supporting Clause 2.1.1.	77
9.2.2.3	Supporting Clause 2.1.2.	79
9.2.2.4	Supporting Clause 2.2.	81
9.2.2.5	Supporting Clause 2.3.	82
9.2.2.6	Supporting Clause 2.4.	84
9.2.2.7	Supporting Clause 2.5.	85
9.2.2.8	Supporting Clause 2.6.	87
9.2.2.9	Supporting Clause 2.7.	89
9.2.3	<i>Fundamental Clause 3. Management objectives and plan</i>	92
9.2.3.1	Supporting Clause 3.1.	92
9.2.3.2	Supporting Clause 3.1.1.	94
9.2.3.3	Supporting Clause 3.1.2.	95
9.2.3.4	Supporting Clause 3.1.3.	96
9.2.3.5	Supporting Clause 3.2.	98
9.2.3.6	Supporting Clause 3.2.1.	98
9.2.3.7	Supporting Clause 3.2.2.	99
9.2.3.8	Supporting Clause 3.2.3.	100
9.2.3.9	Supporting Clause 3.2.4.	101
9.3	<i>Section B: Science & Stock Assessment Activities, and the Precautionary Approach</i>	104
9.3.1	<i>Fundamental Clause 4. Fishery data</i>	104
9.3.1.1	Supporting Clause 4.1.	104
9.3.1.2	Supporting Clause 4.1.1.	107
9.3.1.3	Supporting Clause 4.1.2.	110
9.3.1.4	Supporting Clause 4.2.	112
9.3.1.5	Supporting Clause 4.2.1.	114

9.3.1.6	Supporting Clause 4.3.....	115
9.3.1.7	Supporting Clause 4.4.....	117
9.3.1.8	Supporting Clause 4.5.....	119
9.3.1.9	Supporting Clause 4.6.....	122
9.3.1.10	Supporting Clause 4.7.....	124
9.3.1.11	Supporting Clause 4.8.....	125
9.3.1.12	Supporting Clause 4.9.....	127
9.3.1.13	Supporting Clause 4.10.....	128
9.3.1.14	Supporting Clause 4.11.....	129
9.3.2	<i>Fundamental Clause 5. Stock assessment</i>	130
9.3.2.1	Supporting Clause 5.1.....	130
9.3.2.2	Supporting Clause 5.1.1.....	134
9.3.2.3	Supporting Clause 5.1.2.....	135
9.3.2.4	Supporting Clause 5.2.....	140
9.3.2.5	Supporting Clause 5.3.....	143
9.3.2.6	Supporting Clause 5.4.....	145
9.3.2.7	Supporting Clause 5.5.....	146
9.3.3	<i>Fundamental Clause 6. Biological reference points and harvest control rule</i>	148
9.3.3.1	Supporting Clause 6.1.....	148
9.3.3.2	Supporting Clause 6.2.....	153
9.3.3.3	Supporting Clause 6.3.....	158
9.3.3.4	Supporting Clause 6.4.....	161
9.3.3.5	Supporting Clause 6.5.....	166
9.3.4	<i>Fundamental Clause 7. Precautionary approach</i>	168
9.3.4.1	Supporting Clause 7.1.....	168
9.3.4.2	Supporting Clause 7.1.1.....	171
9.3.4.3	Supporting Clause 7.1.2.....	172
9.3.4.4	Supporting Clause 7.2.....	174
9.4	Section C: Management Measures, Implementation, Monitoring, and Control	175
9.4.1	<i>Fundamental Clause 8. Management measures.....</i>	175
9.4.1.1	Supporting Clause 8.1.....	175
9.4.1.2	Supporting Clause 8.1.1.....	178
9.4.1.3	Supporting Clause 8.1.2.....	180
9.4.1.4	Supporting Clause 8.2.....	182
9.4.1.5	Supporting Clause 8.3.....	183
9.4.1.6	Supporting Clause 8.4.....	185
9.4.1.7	Supporting Clause 8.4.1.....	187
9.4.1.8	Supporting Clause 8.5.....	189
9.4.1.9	Supporting Clause 8.5.1.....	191
9.4.1.10	Supporting Clause 8.6.....	193
9.4.1.11	Supporting Clause 8.7.....	194
9.4.1.12	Supporting Clause 8.8.....	196
9.4.1.13	Supporting Clause 8.9.....	198
9.4.1.14	Supporting Clause 8.10.....	200
9.4.1.15	Supporting Clause 8.11.....	201
9.4.1.16	Supporting Clause 8.12.....	203
9.4.1.17	Supporting Clause 8.13.....	205
9.4.2	<i>Fundamental Clause 9. Appropriate standards of fishers' competence.....</i>	206
9.4.2.1	Supporting Clause 9.1.....	206
9.4.2.2	Supporting Clause 9.2.....	211
9.4.2.3	Supporting Clause 9.3.....	213
9.4.3	<i>Fundamental Clause 10. Effective legal and administrative framework</i>	215

9.4.3.1	Supporting Clause 10.1.....	215
9.4.3.2	Supporting Clause 10.2.....	220
9.4.3.3	Supporting Clause 10.3.....	222
9.4.3.4	Supporting Clause 10.3.1.....	223
9.4.3.5	Supporting Clause 10.4.....	224
9.4.3.6	Supporting Clause 10.4.1.....	225
9.4.4	Fundamental Clause 11. Framework for sanctions.....	226
9.4.4.1	Supporting Clause 11.1.....	226
9.4.4.2	Supporting Clause 11.2.....	229
9.4.4.3	Supporting Clause 11.3.....	232
9.4.4.4	Supporting Clause 11.4.....	235
9.5	Section D: Serious Impacts of the Fishery on the Ecosystem.....	236
9.5.1	Fundamental Clause 12. Impacts of the fishery on the ecosystem.....	236
9.5.1.1	Supporting Clause 12.1.....	236
9.5.1.2	Supporting Clause 12.2.....	237
9.5.1.3	Supporting Clause 12.2.1.....	237
9.5.1.4	Supporting Clause 12.2.2.....	240
9.5.1.5	Supporting Clause 12.2.3.....	241
9.5.1.6	Supporting Clause 12.2.4.....	243
9.5.1.7	Supporting Clause 12.2.5.....	246
9.5.1.8	Supporting Clause 12.2.6.....	247
9.5.1.9	Supporting Clause 12.2.7.....	248
9.5.1.10	Supporting Clause 12.2.8.....	250
9.5.1.11	Supporting Clause 12.2.9.....	251
9.5.1.12	Supporting Clause 12.2.10.....	254
9.5.1.13	Supporting Clause 12.2.11.....	255
9.5.1.14	Supporting Clause 12.3.....	257
9.5.1.15	Supporting Clause 12.4.....	259
9.5.1.16	Supporting Clause 12.5.....	261
9.5.1.17	Supporting Clause 12.6.....	262
9.5.1.18	Supporting Clause 12.7.....	264
9.5.2	Fundamental Clause 13. Fisheries enhancement activities.....	266
9.5.2.1	Supporting Clause 13.1.....	266
9.5.2.2	Supporting Clause 13.1.1.....	269
9.5.2.3	Supporting Clause 13.2.....	271
9.5.2.4	Supporting Clause 13.2.1.....	273
9.5.2.5	Supporting Clause 13.3.....	275
9.5.2.6	Supporting Clause 13.4.....	276
9.5.2.7	Supporting Clause 13.5.....	278
9.5.2.8	Supporting Clause 13.6.....	280
9.5.2.9	Supporting Clause 13.7.....	285
9.5.2.10	Supporting Clause 13.7.1.....	287
9.5.2.11	Supporting Clause 13.7.2.....	288
9.5.2.12	Supporting Clause 13.7.3.....	289
9.5.2.13	Supporting Clause 13.8.....	289
9.5.2.14	Supporting Clause 13.9.....	291
9.5.2.15	Supporting Clause 13.10.....	292
9.5.2.16	Supporting Clause 13.11.....	293
9.5.2.17	Supporting Clause 13.12.....	295
9.5.2.18	Supporting Clause 13.13.....	297
10	Non-conformances and Corrective Actions.....	299
10.1	Non-conformances and associated Corrective Actions.....	299

10.2	Recommendations.....	299
11	References	301
12	Appendices	317
12.1	Appendix 1 – External Peer Review	317
12.2	Appendix 2 – Stakeholder submissions and Assessment Team Responses.....	318
12.2.1	<i>Peer Reviewer 1.....</i>	<i>318</i>
12.2.1.1	General Comments	318
12.2.1.2	Non-conformances raised (if applicable).....	318
12.2.1.3	Scoring element review	319
12.2.1.4	Conclusion	326
12.2.2	<i>Peer Reviewer 2.....</i>	<i>326</i>
12.2.2.1	General Comments	326
12.2.2.2	Non-conformances raised (if applicable).....	327
12.2.2.3	Scoring element review	327
12.2.2.4	Conclusion	335
12.3	Appendix 3 – Data Deficient Framework (if applicable)	335
12.4	Appendix 4 – Assessment Team and Peer Reviewer Bios.....	335
12.4.1	<i>Assessment Team Bios.....</i>	<i>335</i>
	Ivan Mateo, Ph.D. Lead Assessor	335
	Scott Marshall, Assessor 1	335
	Ray Beamesderfer, Assessor 2	336
12.4.2	<i>Peer Reviewer Bios</i>	<i>336</i>
	Randy Ericksen.....	336
	Stephen Fried.....	337
12.5	Appendix 5. Alaska salmon escapements relative to goals 2014 -2022 (from Munro 2023)	338
12.6	Appendix 6. Meeting Summary: CSI Alaska Salmon Commercial Fisheries Reassessment Certification Decision Committee meeting	351
12.7	Meeting Summary: CSI Reassessment Alaska Salmon Commercial Fisheries Certification Committee & Assessment Team Meeting	352

1.1 List of Figures

Figure 1. ADF&G Fishery management regions (Southeast, Central, Arctic-Yukon-Kuskokwim, and Westward). Source: (https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmonmaps)	19
Figure 2. Purse seiner.	20
Figure 3. Gillnetter. Source: http://www.cf.adfg.state.ak.us/geninfo/pubs/pubshome.php?vessels	21
Figure 4. Salmon troller.	22
Figure 5. Alaska commercial salmon catch for all species combined, 1900-2023 (Source: Wilson 2024).	24
Figure 6. Functional management process of the Alaska salmon fishery. (Source: Krupa et al., 2018)	26
Figure 7. Alaska commercial salmon harvest by species 1985-2023.	31
Figure 8 Ex-vessel value of the Alaska commercial salmon fishery harvest, 1975-2023.	34
Figure 9. Salmon hatcheries currently operating in Alaska (Source: Wilson 2024).	38
Figure 10. Annual releases of hatchery fish in Alaska by species (Source: Wilson 2024).	39
Figure 11. Salmon eggs collected at by PNP hatcheries and by state and federal hatcheries, and PNP hatchery permitted capacity by species and total, 1975–2023 (Source: Wilson 2024).	40
Figure 12. Alaska hatchery juvenile salmon releases by mark type (Source: Wilson 2024).	44
Figure 13. Hatchery and wild contributions to commercial (common property and hatchery cost recovery) salmon harvest (Source: data from Wilson 2024).	45
Figure 14. Marine Protected Areas in Alaska.	265

1.2 List of Tables

Table 1. Main strengths and weaknesses of the Alaska Salmon Commercial Fisheries.....	12
Table 2. Relevant CSI program documents including applicable versions.	13
Table 3. Fishery Applicant details and key contact information.	14
Table 4. Units of Assessment.....	15
Table 5. Units of Certification.	16
Table 6. Salmon species life-cycle, habitat and primary types of gear used by region.	17
Table 7. General Seasonality of Salmon Catch by Species	22
Table 8. The contribution each species made to the catch by area between 1985 and 2023 (percent of number of fish landed)	32
Table 9. The 2023 commercial catch by area and species (number of fish)	32
Table 10. The 2023 commercial salmon catch by area and species (whole weight)	33
Table 11. Alaska commercial salmon harvests (numbers and pounds) and ex-vessel values, 2023.....	35
Table 12. Estimated juvenile salmon releases from Alaska hatcheries by region, 2023 (Source: Wilson 2024).	39
Table 13. Summary of meetings for the 3 rd CSI reassessment of AK Salmon Commercial Fisheries , March 5-6, 2025.....	48
Table 14. Confidence ratings and conformance levels for each clause of the RFM Standard 2.1.	52
Table 15. Stocks of concern. (Source: Munro , 2024)	155
Table 16. Frequencies with which spawning escapements exceed proxy limit reference points for Alaska salmon, 2007-2021*.....	156
Table 17. Southeast Region Chinook, chum, coho, pink, and sockeye salmon escapements compared to escapement goals for the years 2014 to 2022	338
Table 18. Central Region (Bristol Bay, Cook Inlet, Prince William Sound/Copper River) Chinook, chum, coho, pink, and sockeye salmon escapements compared to escapement goals for the years 2014 to 2022.....	339
Table 19. AYK Region escapements compared to escapement goals for the years 2014 to 2022.	340

2 Glossary

Terms	Definition
ABC	Allowable Biological Catch
AC	Advisory Committee
ACC	Alaska Administrative Code
ADFG	Alaska Department of Fish and Game
AFA	American Fisheries Act
AFDF	Alaska Fisheries Development Foundation
AFSC	Alaska Fisheries Science Center
APICDA	Aleutian Pribilof Island Community Development Association
AS	Alaska Statue
ASMI	Alaska Seafood Marketing Institute
AWT	Alaska Wildlife Troopers
AYK	Artic Yukon Kuskokwim
BC	British Columbia
BEG	Biological Escapement Goal
BOF	Board of Fisheries
BSAI	Bering Sea and Aleutian Islands
CCRF	Code of Conduct for Responsible Fisheries
CIAA	Cooke Inlet Aquaculture Association
CMA	Chignik Management Area
CDQ	Community Development Quota
CFEC	Commercial Fisheries Entry Commission
COAR	Commercial Operators Annual Report
CPUE	Catch per Unit Effort
CSI	Certified Seafood International
CWCS	Comprehensive Wildlife Conservation Strategy
CWT	Coded Wire Tags
DEC	Department of Environmental Conservation
DIPAC	Douglas Island Pink and Chum Inc.
EIS	Environmental Impact Statement
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
ESA	Endangered Species Act
FAO	Food and Agriculture Organization of the United Nations
FDA	Food Drugs Administration
FMP	Fishery Management Plan
FSB	Federal Subsistence Board
GOA	Gulf of Alaska
GHL	Guideline Harvest Level
HAPC	Habitat Area of Particular Concern
HCD	Habitat Conservation Division
IFQ	Individual Fishing Quota
IJC	International Joint Commission
IMS	Institute of Marine Sciences
IRFA	Initial Regulatory Flexibility Analysis
IRIU	Improved Retention/Improved Utilization
IUCN	International Union of Conservation of Nature
KMA	Kodiak Management Area

KRAA	Kodiak Regional Aquaculture Association
KSMSC	Kodiak Seafood and Marine Science Centre
LCI	Lower Cooke Inlet
LLP	License Limitation Program
LOF	List of Fisheries
ISO	International Organization for Standardization
MMPA	Marine Mammal Protection Act
MOU	Memorandum of Understanding
MSFCMA	Magnuson-Stevens Fisheries Management and Conservation Act
MT	Metric tons
MSY	Maximum Sustainable Yield
Ne	Effective Population
NEPA	National Environmental Policy Act
NGO	Non-governmental Organization
nm	Nautical miles
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPAFC	North Pacific Anadromous Fish Commission
NPFMC	North Pacific Fishery Management Council
NPRB	North Pacific Research Board
NRSEAA	Northern Southeast Aquaculture Association
OEG	Optimal Escapement Goal
OFL	Overfishing Level
OLE	Office for Law Enforcement
OY	Optimum Yield
PAR	Permit Alteration Request
PNP	Private Non Profit
PSMFC	Pacific States Marine Fisheries Commission
PSC	Pacific Salmon Commission
PSC	Prohibited Species Catch
PWS	Prince William Sound
PWSAC	Prince William Sound Aquaculture Center
PWSS	Prince William Sound Science Center
RAC	Regional Advisory Council
RACE	Resource Assessment and Conservation Engineering
REFM	Resource Ecology and Fisheries Management
RFM	Responsible Fisheries Management
SAFE	Stock Assessment and Fishery Evaluation (Report)
SEAK	Southeast Alaska
SEG	Sustainable Escapement Goal
SET	Sustained Escapement Threshold
SSC	Scientific and Statistical Committee
SSL	Steller Sea Lion
SSSC	Sitka Sound Science Center
TAC	Total Allowable Catch
UCI	Upper Cook Inlet
USCG	U.S. Coast Guard
USDA	US Department of Agriculture
USFWS	US Fish and Wildlife
VFDA	Valdes Fisheries Development Association

YRP	Yukon River Panel

3 Executive Summary

This is the 3rd reassessment report of the 4th cycle of CSI certification for the US Alaska Salmon commercial fishery originally certified on 11th March 2011, and recertified on 9th March 2017 and 8th March 2020 and presents the recommendation of the Assessment Team for continued RFM Certification.

The certification covers the United States Alaska commercial salmon fisheries [all Pacific salmon species: Chinook *Oncorhynchus tshawytscha*, sockeye *O. nerka*, coho *O. kisutch*, pink *O. gorbuscha*, and chum *O. keta*]. Fisheries employ troll, purse seine, drift gillnet, beach seine, set gillnet, dip net, and fish wheel (Upper Yukon River only) gear in the four administrative regions of Alaska that are principally managed by the Alaska Department of Fish and Game (ADFG). While certification covers the entire Alaska Exclusive Economic Zone (EEZ), most of the harvest is taken in the internal waters (0-3 nautical miles, and other enclosed waters) of the state of Alaska.

This reassessment report documents the assessment results for the continued certification of commercially exploited US Alaska Salmon commercial fisheries to the CSI Certification Program. This is a voluntary program that has been supported by Certified Seafood International (CSI) who wish to provide an independent, third-party certification that can be used to verify that these fisheries are responsibly managed.

This work is dedicated to the memory of Dr. Brian Allee, a valued colleague, mentor, and friend. His contributions to fisheries science and his unwavering commitment to sustainable resource management left a lasting impact on the field and on all who had the privilege of working with him. His legacy continues to inspire.

3.1 Reassessment process

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

The assessment is based on 4 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:

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

The reassessment process included substantive onsite meetings and video conferences at the Aleutian Pribilof Island Community Development Association Center (APICDA).

APICDA in Anchorage with biologists from different divisions of Alaska Department of Fish & Game (ADFG), and also with salmon hatcheries managers(Kodiak Regional Aquaculture Association (KRAA), Northern Southeast Regional Aquaculture Association(NSRAA), Southern Southeast Regional Aquaculture Associations (SRAA),Prince William Sound Aquaculture Corporation (PWSAA)Cook Inlet Aquaculture Association (CIAA), Douglas Island Pink and Chum, Inc. (DIPAC).. The assessment team also met with the Alaska Fisheries Development Foundation (AFDF) – fishery client and certificate holder.

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

3.2 Main strengths and weaknesses of the fishery

Table 1. Main strengths and weaknesses of the Alaska Salmon Commercial Fisheries

Category	Strengths	Weaknesses
Management	- Legally mandated under Alaska Constitution Article VIII - Managed by ADFG and BOF with clear roles - Transparent public process with Advisory Committees and stakeholder input - Terminal fisheries and escapement-based management priority demonstrably effective in optimizing sustainable harvests. - inseason management and local management authority is highly responsive to stock status.	- Complex multi-agency coordination (e.g., ADFG, BOF, NMFS, NPFMC) can delay decision-making - Escapement goals are not being consistently achieved for many stocks during periods or reduced marine survival -Economic benefits of some mixed species fisheries are prioritized over meeting escapement goals for intermingled stocks -Sustained Escapement Threshold (SET): SET is not formally defined with a technical basis.
Science & Stock Assessment	- Use of Stock Management Units (SMUs) tailored to species and geography - Real-time in-season management based on abundance using sonar, weirs, aerial surveys - Genetic and otolith data used to track hatchery vs. wild fish	- Less detailed data for coho, pink and chum salmon compared to sockeye and Chinook - Lack of established conservation-based reference points (sustainable escapement thresholds) may increase uncertainty in long-term viability of stocks which fall below yield-based target reference points
Precautionary Approach	- Escapement goals (BEG, SEG, SET, OEG) based on best available science - Stock of concern framework with action plans - Adaptive management in response to environmental variability	- Chinook salmon stocks remain in decline despite management actions - Some escapement goals are based on limited or outdated data - Precautionary management measures to protect escapements may not be fully implemented before a formal stock of concern designation
Ecosystem & Habitat Protection	- Minimal gear impact (e.g., troll, gillnet) - Use of MPAs and habitat conservation areas - Bycatch and ETP species (e.g., marine mammals, seabirds) managed effectively - Hatchery salmon impacts and competition with wild salmon are either localized or small in scale	-Relative reproductive success of hatchery fish is less than that of wild fish when hatchery fish stray into wild production areas - Hatchery salmon may compete with wild salmon in the ocean

International Cooperation	- Active in Pacific Salmon Treaty, NPAFC, PSC - Joint research and data sharing with Canada and other nations	- Enforcement of high seas fishing prohibitions relies on international compliance and monitoring - Some fishing areas predominately harvest stocks which are not produced by Alaska
Economic & Social Sustainability	- \$630M average annual ex-vessel value (last 10 years) - Limited entry program supports community-based fisheries - Hatchery programs support economic value and employment	- Hatchery reliance raises questions about long-term sustainability and wild stock competition
Climate Resilience	- Management system is responsive to environmental variability - Long-term data used to detect trends and adjust management	- Climate change introduces high uncertainty in long-term salmon productivity, migration, and marine survival.

3.3 Assessment Team Details

The Assessment Team for this assessment was as follows; further details are provided in [Appendix 1](#)):

The Assessment Team for this reassessment were as following; further details are provided in [Appendix 1](#)):

Dr. Ivan Mateo – Lead Assessor, Responsible for Fundamental Clauses 9 and 11.

Mr. Scott Marshall – Assessor 1, Responsible for Fundamental Clauses 4, 5, 6, 8, 10.

Mr. Ray Beamesderfer – Assessor 2, Responsible for Fundamental Clauses 1, 2, 3, 7, 12, 13.

3.4 Recommendation of the Team with respect to Certification.

Following this third reassessment, the assessment team recommends that the applicant fishery,

- US Alaska Pacific Salmon Commercial Fishery

be awarded continuing certification against the CSI Certification Program Fisheries Standard v2.2.

3.5 Details of Applicable CSI Documents

This reassessment was conducted according to the relevant program documents outlined in Table 2 below.

Please note that this reassessment was conducted under the RFM Fisheries Standard v2.1 which has been also used for other AK fisheries before the launching of the new CSI certification program in April 2025.

Table 2. Relevant CSI program documents including applicable versions.

Document title	Version number, Issue Date	Usage
Procedure 2: Application to Certification Procedures for the RFM Fishery Standard	Version 6.3 October, 2024	Process
RFM Fisheries Standard	Version 2.1	Standard

	October, 2020	
RFM 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 Fishery Applicant Details

Table 3. Fishery Applicant details and key contact information.

Applicant Information		
Organization/Company Name:		Alaska Fisheries Development Foundation
Address:	Street:	PO Box 2205
	City:	Juneau
	State:	Alaska
	Country:	USA
	Zip code	99802
Applicant Key Contact Information		
Name:		Kristy Clement
Position:		Chief Executive Officer
E-mail:		kclement@afdf.org

5 Units of Assessment and Units of Certification

5.1 Units of Assessment

The Units of Assessment are as described in Table 4 below.

Table 4. Units of Assessment			
Units of Assessment			
Species:	Common name:	1	King/Chinook
	Latin name:		<i>Oncorhynchus tshawytscha</i>
	Common name:	2	Sockeye/Red
	Latin name:		<i>Oncorhynchus nerka</i>
	Common name:	3	Coho/Silver
	Latin name:		<i>Oncorhynchus kisutch</i>
	Common name:	4	Pink/Humpback
	Latin name:		<i>Oncorhynchus gorbuscha</i>
	Common name:	5	Keta/Chum
	Latin name:		<i>Oncorhynchus keta</i>
Geographical area:		All	State and Federal waters of the U.S. state of Alaska in FAO major fishing area 67
Stock(s):		1	ADFG Admin Region 1: Southeast & Yakutat
		2	ADFG Admin Region 2: Central
		3	ADFG Admin Region 3: Arctic-Yukon-Kuskokwim
		4	ADFG Admin Region 4: Kodiak, Chignik, Alaska Peninsula, Aleutian Islands
Management system:		All	Alaska Department of Fish and Game (ADFG)
Fishing gear/method:		1	Troll
		2	Purse Seine
		3	Beach Seine
		4	Drift Gillnet
		5	Set Gillnet
		6	Dipnet
		7	Fish Wheel
Client group:			Alaska Fisheries Development Foundation

5.2 Units of Certification

Based on the above Units of Assessment, the Units of Certification (i.e., what would be covered by any resulting certificate if the fishery is ultimately certified) are as described in Table 5 below.

Table 5. Units of Certification.			
Unit of Certification			
Species:	Common name:	1	King/Chinook
	Latin name:		<i>Oncorhynchus tshawytscha</i>
	Common name:	2	Sockeye/Red
	Latin name:		<i>Oncorhynchus nerka</i>
	Common name:	3	Coho/Silver
	Latin name:		<i>Oncorhynchus kisutch</i>
	Common name:	4	Pink/Humpback
	Latin name:		<i>Oncorhynchus gorbuscha</i>
	Common name:	5	Keta/Chum
	Latin name:		<i>Oncorhynchus keta</i>
Geographical area:		All	State and Federal waters of the U.S. state of Alaska in FAO major fishing area 67
Stock(s):		1	ADFG Admin Region 1: Southeast & Yakutat
		2	ADFG Admin Region 2: Central
		3	ADFG Admin Region 3: Arctic-Yukon-Kuskokwim
		4	ADFG Admin Region 4: Kodiak, Chignik, Alaska Peninsula, Aleutian Islands
Management system:		All	Alaska Department of Fish and Game (ADFG)
Fishing gear/method:		1	Troll
		2	Purse Seine
		3	Beach Seine
		4	Drift Gillnet
		5	Set Gillnet
		6	Dipnet
		7	Fish Wheel
Client group:			Alaska Fisheries Development Foundation

6 Background to the Fishery

6.1 Species Biology

The life histories of all Pacific salmon have been studied and reported on extensively. For the purpose of this reassessment report, information was taken directly from the ADFG Wildlife Notebook series. A fundamental biological trait of Pacific salmon, with respect to how they are managed, is their anadromous life history: hatching in freshwater and migrating to the sea at various stages in development (species dependent) before returning to their natal stream to spawn. Table 6 provides a summary of the specific biology and life-cycle traits of each of the five species of salmon that are included in the assessment.

Table 6. Salmon species life-cycle, habitat and primary types of gear used by region.

Species	Life Cycle	Habitat/Feeding	Primary Gear Types by Region
Chinook/ King ¹	The largest of all Pacific salmon, weights of individual fish may exceed 30 pounds. Run timing is usually from May to July. Each female deposits from 3,000 to 14,000 eggs in one or more redds, which she excavates in relatively deep, moving water. Eggs hatch in late winter or early spring, depending on time of spawning and water temperature. The newly hatched fish, called alevins, live in the gravel for several weeks until they wiggle up through the gravel by early spring. Most juvenile Chinook salmon remain in fresh water until the following spring when they migrate to the ocean in their 2 nd year of life. They are sexually mature from 2 nd to 7 th year.	Chinook is abundant from the south-eastern panhandle to the Yukon River. Major populations return to the Yukon, Kuskokwim, Nushagak, Susitna, Kenai, Copper, Alsek, Taku, and Stikine rivers. Redds are in relatively deep, moving water. Juvenile Chinook in freshwater feed on plankton, and then later eat insects. In the ocean, they eat a variety of organisms including herring, pilchard, sand lance, squid, and crustaceans. Chinook salmon grow rapidly in the ocean and often double their weight during a single summer season.	R1: Troll R2: Drift gillnet R3: Gillnet, fish wheel R4: Purse Seine
Chum/ Dog ²	Spawning is typical of Pacific salmon with the eggs deposited in redds located primarily in upwelling spring areas of streams. Female chum may lay as many as 4,000 eggs, but fecundity typically ranges between 2,400 and 3,100 eggs. After spawning in the fall, the salmon fry emerge in spring and move out to sea by fall. Most mature by 4 years age. There are a higher percentage of chums in the northern areas of the state. Chum varies in size from 4 to over 30 pounds, but usually range from 7 to 18 pounds, with females generally smaller than males.	Chum salmon are the most abundant commercially harvested salmon species in many areas of Alaska. Chum salmon often spawn in small side channels and other areas of large rivers where upwelling springs provide excellent conditions for egg survival. Chum typically emigrate from freshwater soon after emergence. Fry feed on small insects in the stream and estuary before forming into schools in salt water where their diet usually consists of zooplankton	R1: Seine, gillnet R2: Seine, drift gillnet R3: Gillnet, fish wheel R4: Purse seine, gillnet
Coho/ silver ³	Coho enter spawning streams from July to November. The female digs a nest, called a redd, and deposits 2,400 to 4,500 eggs.	Coho are found in coastal waters of Alaska from Southeast to Point Hope on the Chukchi Sea and in the Yukon River to the	R 1: Troll, gillnet, purse seine R2: Drift gillnet

¹ http://www.adfg.alaska.gov/static/education/wns/chinook_salmon.pdf

² http://www.adfg.alaska.gov/static/education/wns/chum_salmon.pdf

³ http://www.adfg.alaska.gov/static/education/wns/coho_salmon.pdf

Table 6. Salmon species life-cycle, habitat and primary types of gear used by region.

Species	Life Cycle	Habitat/Feeding	Primary Gear Types by Region
	The eggs develop during the winter, hatch in early spring, and the embryos remain in the gravel utilizing their egg yolk until they emerge in May or June. They spend one to three winters in streams and may spend up to five winters in lakes before migrating to the sea as smolts. Adults usually weigh 8 to 12 pounds and are 24 to 30 inches long, but individuals weighing over 30 pounds have been landed.	Alaska-Yukon border. Coho salmon enter spawning streams from July to November, usually during periods of high runoff. The emergent fry occupy shallow stream margins, and, as they grow, establish territories which they defend from other salmonids. They live in ponds, lakes, and pools within streams and rivers, usually among submerged, woody debris in quiet areas free of current from which they dart out to seize drifting insects.	R3: Gillnet R4: Purse seine, gillnet
Pink/humpback ⁴	Pink salmon enter spawning streams between late June and mid-October and hatch mid-winter. Late winter or spring the fry swim up out of the gravel and migrate downstream into salt water. They mature in 2 years which means that odd-year and even year populations are essentially unrelated. The pink salmon is the smallest of the Pacific salmon found in North America with an average weight of about 3.5 to 4 pounds and average length of 20-25 inches.	Pink salmon are native to Pacific and arctic coastal waters from northern California to the Mackenzie River, Canada, and to the west from the Lena River in Siberia to Korea. Most spawn within a few miles of the coast and spawning in the intertidal zone or the mouth of streams is very common. Shallow riffles where flowing water breaks over coarse gravel or cobble-size rock and the downstream ends of pools are favored spawning areas. Following entry into salt water, the juvenile pink salmon move along the beaches in dense schools near the surface, feeding on plankton, larval fishes, and occasional insects.	R1: Purse seine R2: Purse seine, gillnet R3: Gillnet R4: Purse seine, gillnet
Sockeye/red ⁵	Eggs hatch during the winter, and the young sac-fry, or alevins, remain in the gravel, living off the material stored in their yolk sacs, until early spring. After hatching, juveniles may spend up to four years in fresh water before migrating to sea. In systems with lakes, juveniles usually spend one to three years in fresh water before migrating to the ocean in the spring as smolts. However, in systems without lakes, many juveniles migrate to the ocean soon after emerging from the gravel and spend 1 – 4 years in the ocean before returning to spawn during summer months. Returning adults usually weigh between 4 and 8 pounds, although weights in excess of 15 pounds have been reported.	This species ranges south as far as the Klamath River in California and northern Hokkaido in Japan, to as far as Bathurst Inlet in the Canadian Arctic and the Anadyr River in Siberia. Freshwater systems with lakes where juveniles may rear produce the greatest number. Spawning usually occurs in rivers, streams, and upwelling areas along lake beaches. Fry typically move into rearing areas soon after emergence from the gravel as fry. Juveniles usually spend one to three years in fresh water before migrating to the ocean in the spring as smolts.	R1: Gillnet, purse seine R2: Gillnet R3: Gillnet R4: Purse seine, gillnet

Note, gillnet may include both drift and set net (unless type is specified i.e. drift gillnet).

⁴ http://www.adfg.alaska.gov/static/education/wns/pink_salmon.pdf

⁵ http://www.adfg.alaska.gov/static/education/wns/sockeye_salmon.pdf

6.2 Fishery Location and Method

ADFG divides the salmon fisheries geographically, for management purposes, into four major fishery management regions: R1-Southeast, R2-Central, R3-Arctic-Yukon-Kuskokwim, and R4-Westward (Figure 1). ADFG staff based in each region is assigned responsibility for in-season management of salmon fisheries. Within each of these regions, there are a series of Management Areas, with one or more Area Management Biologists assigned to each. Management Areas are further divided into Districts, which represent watersheds and coastlines, that can extend well into the marine environment for certain fisheries such as troll fisheries:

- Region 1. Southeast Alaska/Yakutat (Juneau and Northern Southeast Alaska Area, Ketchikan and Southern Southeast Alaska Areas: Sitka & Central Southeast Alaska Areas, Yakutat & NW Southeast Alaska Areas)
- Region 2. Central (Prince William Sound, Cook Inlet and Bristol Bay Areas).
- Region 3. Arctic-Yukon-Kuskokwim (Kotzebue, Norton Sound-Port Clarence, Yukon Northern, Upper Yukon, Lower Yukon and Kuskokwim Areas).
- Region 4. Westward (Kodiak, Aleutians, Chignik Areas and Peninsula Area).

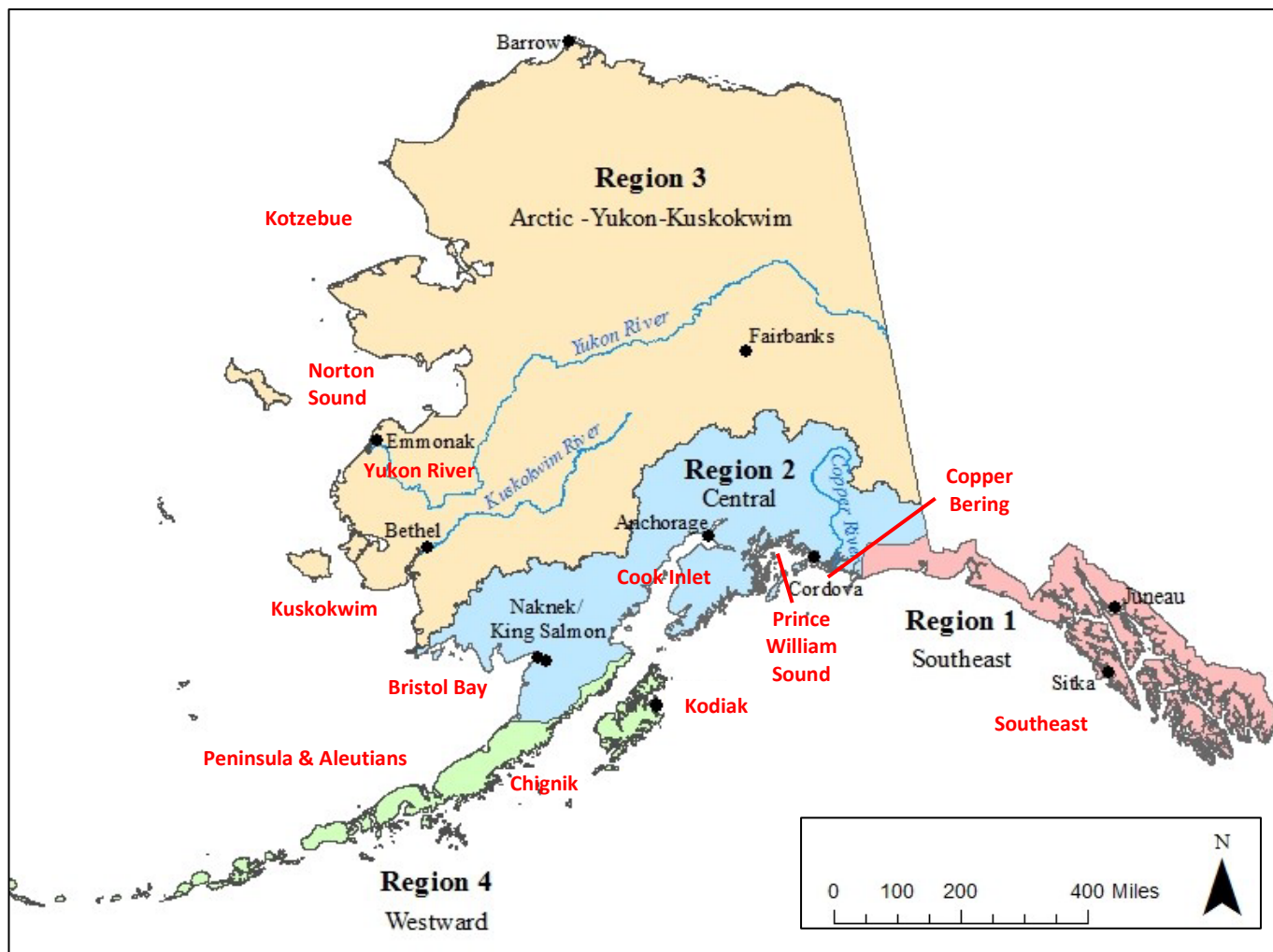


Figure 1. ADF&G Fishery management regions (Southeast, Central, Arctic-Yukon-Kuskokwim, and Westward). (Source: (<https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmonmaps>))

Salmon are harvested commercially in each ADFG Regulatory area mainly through the use of purse seine, gillnet (set or drift gillnet), and troll gear. All gear types are managed through state statutes and regulations that specify design and deployment, which are often specific to individual regions and areas. Regulations for each region are readily available to all fishers and the general public at each area office of ADFG and AWT as well as online ⁶.

Purse Seining

Purse seiners ⁷ (Figure 2) catch salmon, primarily pink salmon, by encircling them with a long net and then drawing (pursing) the bottom closed to capture them. Alaska laws limit the length of purse seiners to 58 feet to help manage fishing effort. The net is first stacked on the stern of the purse seiner and then deployed into the water while the boat travels in a large circle around the fish. The far end of the net is attached to a power skiff, which helps the seiner complete the circle. The top of the net stays on the surface of the water because of the float line (comprised of colored floats) and the bottom of the net falls vertically because of its weighted lead line. A series of metal rings are attached to the bottom of the net, and a purse line passes through all of them. When the power skiff returns the end of the net to the seiners, the purse line is pulled, which draws the rings close to one another and closes the bottom of the net so that the fish cannot escape. The lines and the net are then pulled in with a hydraulic power block (winch). Once most of the net has been retrieved, with the remainder of it lying in a *bag* alongside the vessel, the fish are dipped from the bag and into the vessel hold. Directed purse seine fisheries for Alaska salmon occur in fisheries in Southeast, Prince William Sound, Lower Cook Inlet, Kodiak, Chignik, Alaska Peninsula and the Aleutian Islands.



Figure 2 ⁸. Purse seiner.

⁶ <http://www.adfg.alaska.gov/index.cfm?adfg=fishregulations.commercial>

⁷ http://www.adfg.alaska.gov/static/fishing/PDFs/commercial/whatkindofboat_cf.pdf

⁸ https://www.adfg.alaska.gov/index.cfm?adfg=maps.commercial_fishing_gis

Gill netting (Set and Driftnets)

Gillnetters (Figure 3) catch salmon, primarily sockeye, chum, and coho salmon, by setting curtain-like nets perpendicular to the direction in which the salmon are traveling as they migrate along the coast toward their natal streams⁹. To keep it suspended vertically in the water, the net has a float line (head line) on the top and a weighted lead line (foot rope) on the bottom. Gillnets are either drifted or set.

The mesh material is multifilament nylon, and mesh size is designed to allow the targeted species to only get their head through the mesh, but not their body. The salmon's gill covers (operculum) get caught in the mesh as the fish tries to swim free. Gillnets work best in silty or turbid water, which makes them difficult for the fish to see, and mesh material can be ordered in various colors to make the net harder to see under various conditions. Gillnet vessels are usually 30 to 40 feet long. However, Alaska laws limit vessel length for Bristol Bay salmon fisheries to 32 feet. Net retrieval is accomplished by using hydraulic power to wind the gillnet around a drum located on either the bow or stern of the boat. Fish are removed from the net by hand, collecting them from the mesh as the net is reeled on-board. Driftnets have a float line on the top and a weighted lead line on the bottom to hold them vertical in the water. These nets must be connected to the fishing vessel, which cannot be anchored or grounded. Set-netting is a small-scale type of gillnetting done by hand (without hydraulic power), from a skiff or from shore, often by local families. Nets are fixed in place with anchors. Skiffs are used to set nets, with one end fixed on shore, the other anchored offshore. Gillnet fisheries occur in all regions.



Figure 3. Gillnetter¹⁰. Source: <http://www.cf.adfg.state.ak.us/geninfo/pubs/pubshome.php#vessels>

⁹ http://www.adfg.alaska.gov/static/fishing/PDFs/commercial/whatkindofboat_cf.pdf

¹⁰ <http://www.cf.adfg.state.ak.us/geninfo/pubs/pubshome.php#vessels>

Trolling

Troll vessels (Figure 4) catch salmon, principally Chinook and coho salmon, by dragging (trolling) bait or lures through feeding concentrations of salmon¹¹. Typically, four to six main wire lines are fished, each of which may have up to a 60-pounds lead or cast iron sinker (*cannon ball*) on its terminal end, and 8 to 12 nylon leaders spaced out along its length, each of which ends in either a lure or baited hook. To retrieve hooked fish, the main lines are wound about small, on-board spools via hand crank (hand trollers) or with hydraulic power (power trollers), and large salmon are gaffed when alongside the vessel to bring them aboard. The Alaska salmon troll fishery occurs only in Region 1.



Figure 4. Salmon troller¹².

All Alaska salmon fisheries are based on the seasonal migrations of the different salmon species returning to Alaska. A descriptive figure (Table 7) is provided below.

Table 7. General Seasonality of Salmon Catch by Species¹³

Salmon	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Chinook												
Sockeye												
Coho												
Pink												
Chum												

¹¹ http://www.adfg.alaska.gov/static/fishing/PDFs/commercial/whatkindofboat_cf.pdf

¹² <http://www.cf.adfg.state.ak.us/geninfo/pubs/pubshome.php#vessels>.

¹³ <http://www.alaskaseafood.org/the-catch/seasonality/>

6.3 Fishery Management History and Organization

Commercial salmon fisheries have a long history in Alaska beginning with establishment of the first saltery in 1868 and the first cannery a year later (Clark et al. 2006). By 1898, 59 canneries were operating in Alaska and by 1920, 160 canneries were operating. Early commercial salmon fisheries were largely unregulated, and catches expanded rapidly during the early 1900s to peak in the 1930s before a 20-year decline. Regulatory efforts gradually increased over this period.

The lack of self-rule in salmon management and the influence of the major lower 48 canning companies on federal salmon management were primary forces in Alaska for statehood. Of the 434 fish traps licensed in 1948, only 38 (9%) belonged to Alaskan residents while 245 (56%) were owned and operated by the 8 largest canning companies. Alaska achieved statehood in 1959, and fisheries management responsibility was transferred to the state in 1960.

Article VIII of the Alaska constitution provides policy guidance for the management of fishery resources to promote sustained yield. At statehood, the Alaska legislature created the Department of Fish and Game and the Division of Commercial Fisheries and gave them a mandated fishery management mission. The Alaska legislature has passed laws since statehood providing further authority and guidance. The Alaska Board of Fish and Game and later the Alaska Board of Fisheries (BOF) has promulgated a diverse set of regulations and plans for management of Alaska's subsistence commercial, personal use and sport salmon fisheries that provide guidance for day-to-day management by area biologists of the Division of Commercial Fisheries.

In 1973, the Alaska legislature passed a bill creating the first comprehensive limited entry program in the United States. The limited entry program implemented for commercial salmon fisheries in Alaska stabilized the number of fishermen and therefore the amount of gear used in each of the State's salmon fisheries. Fishermen can now only participate in the commercial salmon fisheries in Alaska by holding a limited entry permit or by working as a crew member for a limited entry permit holder. In 2021, 10,683 commercial salmon fishery permits were issued in Alaska. Each limited entry permit is valid for a specific gear type and area in Alaska. Gill net permits (set and drift combined) are the most common gear, representing about 70% of all valid permits to fish for salmon in Alaska. Limited entry permits are bought and sold on the open market and their value is based upon gear type and area.

The historical harvest of Alaska salmon clearly shows the impact of input controls (limited entry in 1978) on the progressive development of the fishery (Figure 5)¹⁴. Average catches over the last 5 years have been 190 million fish compared to catches of about 20 million fish in the early 1970s.

Alaska's fisheries management system can be described as organized and has functioned well for over five decades, as demonstrated by the sustainability of Alaska's salmon harvests. The BOF sets harvest policies, regulations, and allocations, and ADFG conducts biological research and management enforcing the BOF's decisions.

The dominant goal is the salmon harvest policy known as "fixed escapement". This means that management's first priority is to ensure that sufficient numbers of adult spawning salmon escape capture in the fishery and are allowed to spawn in the river systems, thus maintaining the long-term health of the stocks. All human uses of salmon, especially commercial fishing, are subordinate to this guiding principle. Because of the natural variability of environmental conditions (i.e. Pacific Decadal Oscillation, El Niño, etc.) the total number of adult salmon returning to spawn varies considerably each year. In order to achieve spawning goals, which are set within a range, the commercial harvest also fluctuates from year to year.

¹⁴ <http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmoncatch>

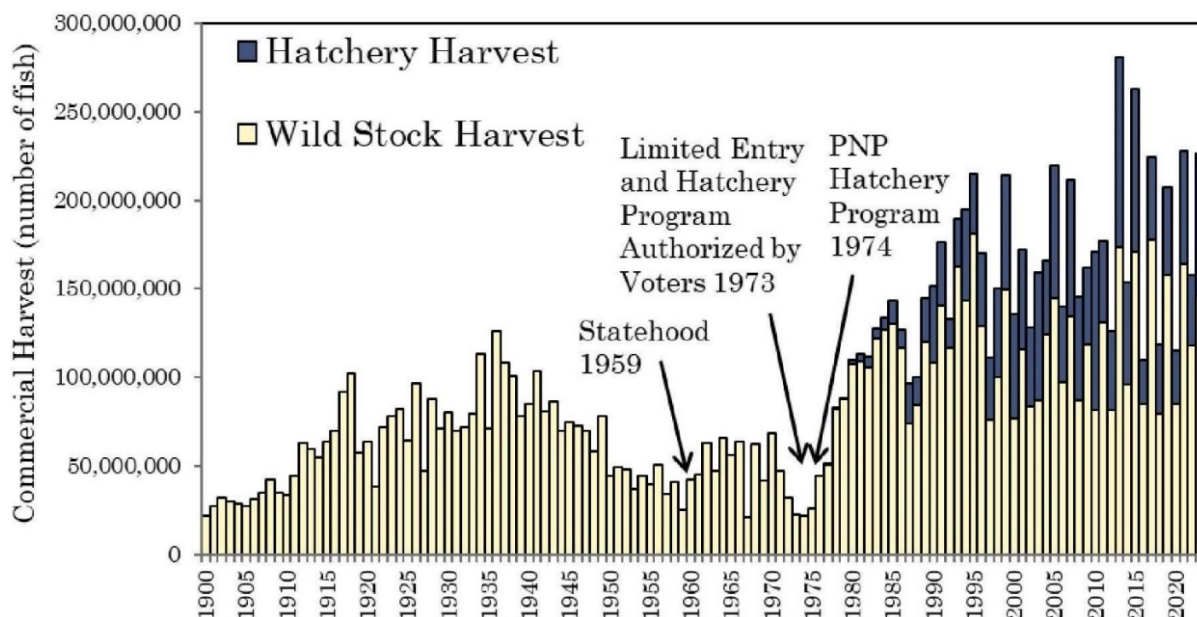


Figure 5. Alaska commercial salmon catch for all species combined, 1900-2023 (Source:Wilson 2024).

State and Federal Management Regimes

Article VIII of the Alaska Constitution is dedicated to natural resources. In 1973, the Alaska legislature passed a bill creating the first comprehensive limited entry program for commercial fisheries in the United States. The limited entry program implemented for commercial salmon fisheries in Alaska stabilized the number of fishermen and, therefore, the amount of gear used in each of the State's salmon fisheries. Furthermore, the 1985 Pacific Salmon Treaty (PST) established an international management regime designed to rebuild some salmon stocks, limit harvests in specific fisheries, and define equitable allocations between U.S and Canadian fishermen (Woodby 2005). In 1976, Congress adopted the Magnuson-Stevens Fisheries Management and Conservation Act (MSFCMA). This legislation extended U.S. control of its fishery resources from three to 200 miles offshore. The high seas harvest of Alaskan salmon stocks was substantially reduced immediately after passage of the MSFCMA.

Authority for the management of the subsistence and commercial salmon fisheries of Alaska was primarily vested with ADFG, Division of Commercial Fisheries at statehood. The Alaska Board of Fish and Game and later the BOF, was formed in 1975. The BOF is a citizen-based organization, with members appointed by the governor and confirmed by the legislature, responsible for considering and adopting regulations to allocate resources among user groups as well as to establish fish reserves and conservation areas, fishing seasons, quotas, and bag limits size restrictions, means and methods, habitat protection, stock enhancement; and to develop commercial, subsistence, sport and personal use fisheries (AS 16.05.251). Since the BOF is tasked with resolving fisheries disputes by making politically charged decisions on allocation, ADFG is able to concentrate its efforts on management and conservation decisions. Additionally, the BOF forms Advisory Committees (ACs) throughout the state, composed of local residents, that provide management recommendations, which the BOF is not required to adopt (AS 16.05.260) The operation and functioning of the ACs are defined by regulations (AAC 5 Chapters 96 – 97). These ACs serve as a forum to bring individuals, agencies, and interested organizations together to review important fish and game resource matters. These forums not only provide an opportunity for collaboration and communication, keystones to forging regulatory change with the boards, but serve to strengthen relationships among each of these parties in their work to improve Alaska's fish and game resources.¹⁵

¹⁵ www.adfg.alaska.gov/static-f/regulations/regprocess/pdfs/acmanforms/ac_process_brochure_2014.pdf

6.3.1 ADFG and Board of Fisheries (BOF) Functions

ADFG Commercial Fisheries Division Functions

ADFG is organized into a series of Divisions with specific but often interrelated management functions. The Division responsible for the management and conservation of Alaska's commercial fisheries is the Commercial Fisheries Division. Key functions include:

- **Stock Assessment & Applied Research:** Maintain and improve ongoing programs and develop new programs for the enumeration, assessment, and understanding of salmon stocks. The Division also operates several large vessels to support management and research functions
- **Harvest Management:** Control the harvest of fishery resources for subsistence, commercial, and personal uses according to plans and regulations.
- **Laboratory Services:** Operate three fisheries laboratories for genetic identification, fish pathology, and ageing/tagging research.
- **Aquaculture Permitting:** Permit and provide regulatory, technical, and planning services to aquatic farmers and private non-profit hatchery operators.
- **Information Services and Public Participation:** Develop and maintain dissemination of data, analyses, and published reports. Involvement of the public in management of fish and wildlife resources. Optimize public participation in fish and wildlife pursuits.

The Division of Commercial Fisheries operates 23 area offices, which are organized into four regions and staffed with area management biologists. These area management biologists are provided with fishery management authority to address the rapidly changing in season fishery management needs of the salmon fisheries in Alaska.

In 2000, the Policy for the Management of Sustainable Salmon Fisheries (MSSF) was adopted into state regulation (5 AAC 39.222). The landmark policy updates and strengthens long-standing principles of Alaska's salmon management program. Most importantly, it directs ADFG and the BOF to follow a systematic process for evaluating the health of salmon stocks throughout the state by requiring ADFG to provide the BOF, in concert with its regulatory cycle, reports on the status of salmon stocks and fisheries under consideration for regulatory changes. The policy also defined a new process for identifying stocks of concern (stocks which have not met escapement goals or yield expectations), and requires ADFG and the BOF to develop action plans to rebuild these stocks through the use of management measures, improved research, and restoring and protecting habitat.

Three levels of concern are identified: (1) a yield concern, which is the least severe and results from the inability to maintain expected harvest levels over a 4- to 5-year period; (2) a management concern, which results from the inability to maintain escapements within escapement goal ranges over a 4- to 5-year period despite the use of management measures; (3) a conservation concern, which is the most severe and results from the inability to maintain escapements above a minimum threshold, below which the stock's ability to sustain itself is jeopardized, over a 4- to 5-year period. Escapement goals are classified as either "biological escapement goals," which are scientifically based and represent the escapement estimated to provide the greatest potential for maximum sustained yield, or "sustainable escapement goals," which represent an escapement level that is known to provide for sustained yield over a 5- to 10-year period.

The NPFMC has developed a management plan for salmon caught in waters from 3 to 200 miles offshore of Alaska, and the NMFS delegated authority to manage salmon fisheries in this area to the State of Alaska (Clark et al., 2006). The NPFMC is kept informed of the state of these fisheries and can amend the FMP for salmon when necessary. The NPFMC has deferred regulation of the commercial troll and recreational salmon fisheries in the Exclusive Economic Zone (EEZ) to ADFG since almost all fishing takes place in state managed waters. The Council reserves the right to specify management measures applicable to the EEZ that differ from those of the State, if it deems State actions to be inconsistent with this FMP or the MSA. However, ADFG remains the principal management organization for Alaska salmon fisheries.

The Board of Fisheries (BOF)

The BOF's main role is to conserve and develop the fishery resources of the state. This involves setting seasons, bag limits, methods and means for the state's subsistence, commercial, sport, guided sport, and personal use fisheries, as well as setting policy and direction for management of the state's fishery resources. The BOF is charged with making allocative decisions, while ADFG is responsible for management based on those decisions.

The BOF consists of seven members serving three-year terms. Members are appointed by the Governor of Alaska, and confirmed by the State Legislature (Figure 6). Members are appointed on the basis of interest in public affairs, good judgment, knowledge, and ability in the field of action of the BOF, with a view to providing diversity of interest and points of view in the membership.

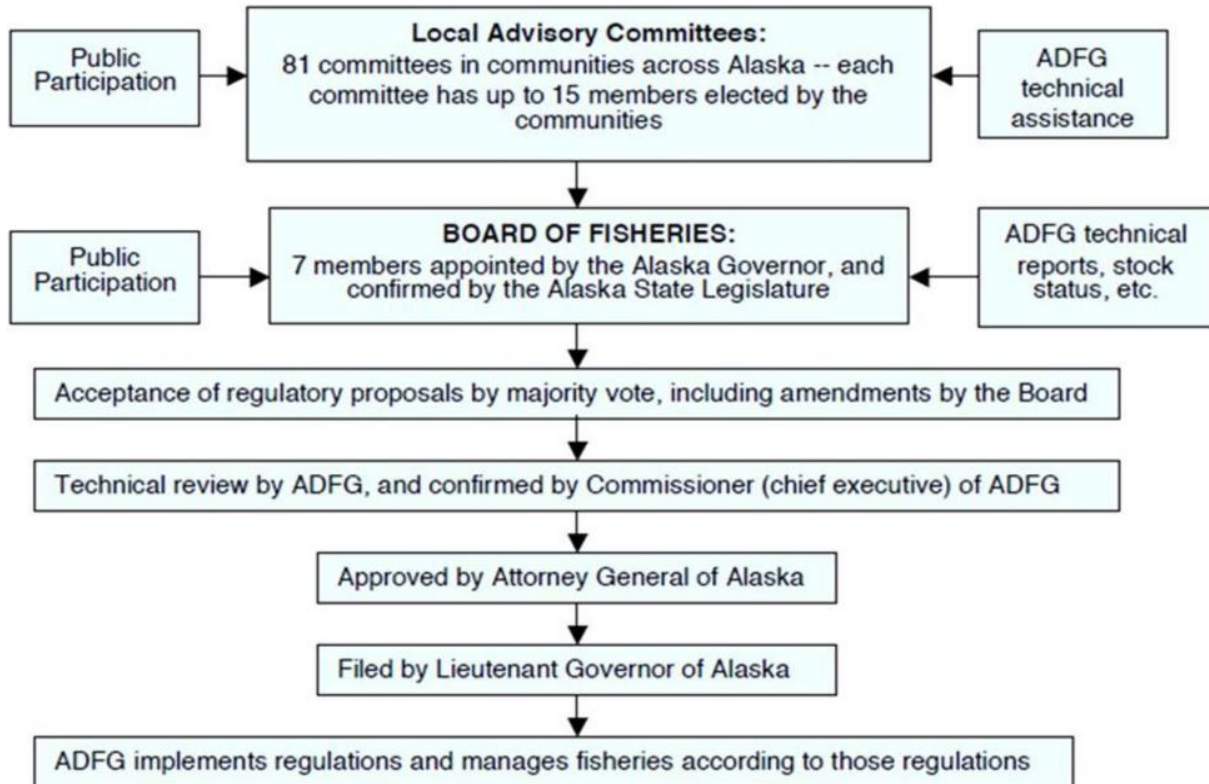


Figure 6. Functional management process of the Alaska salmon fishery. (Source: Krupa et al., 2018)

The BOF meets four to six times per year in communities around the state, to consider proposed changes to fisheries regulations. To create regulations that are sound and enforceable, the BOF uses biological and socioeconomic information provided by ADFG, public comments received from people inside and outside of the state, and guidance from the Alaska Department of Public Safety and Alaska Department of Law.

The BOF's decision making process is considered to be public and transparent. For example, members of the public can attend the meetings and, if desired, state their concerns and opinions on regulatory proposals to the BOF through a defined and accessible process.

Four to six BOF meetings generally occur from October to March in communities throughout Alaska. Proposals for commercial, sport, guided sport, personal use, and subsistence fisheries within each fishery area are taken up for consideration by the BOF on a three-year cycle. There are also procedures for the BOF to consider out-of-cycle proposals under certain guidelines (AAC 39.999) and subsistence proposals (5 AAC 96.615 (a)) for topics not covered by the notice soliciting proposals. Additionally, any proposal submitted by the NMFS will be considered during a current meeting cycle (5 AAC 39.999 Policy Changing Board Agenda (3) (b))

6.3.2 Coastal Management Framework for Alaska Salmon Habitat Conservation

Management of coastal resources within the Alaskan EEZ is governed by a framework of policies, regulations, statutes and laws which aim to achieve sustainable and integrated use of living marine resources. Multiple State and federal agencies are involved in coastal zone decision-making processes and activities of relevance to the BSAI crab fishery resource and its users. The system takes into account the fragility of coastal ecosystems, the finite nature of their natural resources and the needs of coastal communities. Further, it supports sustainable and integrated use of living marine resources and avoids conflict among users.

Salmon fisheries are managed by the State (ADF&G) with Federal oversight by the NMFS and NPFMC.¹⁶ As Federal agencies, NMFS and NPFMC participate in coastal area management-related institutional frameworks through the federal National Environmental Policy Act (NEPA) process. In addition to NMFS and NPFMC, a number of other State and Federal entities participate in coastal zone processes to ensure sustainable and integrated use of living marine resources. Some of the most important entities - together with a brief description of their role in managing coastal resources within the EEZ of Alaska are presented below.

Alaskan Department of Environmental Conservation (ADEC)¹⁷

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

Alaska Department of Fish and Game (ADFG)¹⁸

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

Alaskan Department of Natural Resources (ADNR)¹⁹

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

ADNR Office of Project Management and Permitting (OPMP)²⁰

The OPMP coordinates the review of larger scale projects in the state such as transportation, oil and gas, mining, federal grants, ANILCA coordination (ANILCA = Alaska National Interest Lands Conservation Act), and land use planning.

U.S. Fish and Wildlife Service (USFWS)²¹

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

¹⁶ <http://www.npfmc.org/>

¹⁷ <https://www.epa.gov/nepa/national-environmental-policy-act-review-process>

¹⁸ <https://dec.alaska.gov/>

¹⁹ <http://www.adfg.alaska.gov/index.cfm?adfg=uselicense.main>

²⁰ http://www.boem.gov/uploadedFiles/Proposed_OCS_Oil_Gas_Lease_Program_2012-2017.pdf

²¹ http://www.boem.gov/uploadedFiles/Proposed_OCS_Oil_Gas_Lease_Program_2012-2017.pdf

Bureau of Ocean Energy Management (BOEM) ²²

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

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

6.3.3 Federal Subsistence Management Program

The Federal Subsistence Management Program is a multi-agency effort to provide the opportunity for a subsistence way of life to rural Alaskans on Federal public lands and waters while maintaining healthy populations of fish and wildlife. Subsistence fishing and hunting provide a large share of the food consumed in rural Alaska. Nowhere else in the United States is there such a heavy reliance upon wild foods.

This dependence on wild resources is cultural, social and economic. Alaska's indigenous inhabitants have relied upon the traditional harvest of wild foods for thousands of years and have passed this way of life, its culture, and values down through generations. Subsistence has also become important to many non-Native Alaskans, particularly in rural Alaska.

The Alaska National Interest Lands Conservation Act (ANILCA), passed by Congress in 1980, mandates that rural residents of Alaska be given a priority for subsistence uses of fish and wildlife. In 1989, the Alaska Supreme Court ruled that ANILCA's rural priority violated the Alaska Constitution. As a result, the Federal government manages subsistence activity on Federal public lands and waters in Alaska-about 230 million acres or 60 percent of the land within the state. To help carry out the responsibility for subsistence management, the Secretaries of the Interior and Agriculture established the Federal Subsistence Management Program

The program provides for public participation through the Federal Subsistence Board and 10 Regional Advisory Councils. The Board is the decision-making body that oversees the program. It is made up of the regional directors of the U.S. Fish and Wildlife Service, National Park Service, Bureau of Land Management, Bureau of Indian Affairs, U.S. Forest Service and there are three public members appointed by the Secretaries of the Interior and Agriculture.

In October 2024, the Department of the Interior expanded the membership of the Federal Subsistence Board to include three new representatives nominated by federally recognized Alaska Native tribes ²³. These members are not required to be tribal citizens but must have personal knowledge and direct experience with subsistence uses in rural Alaska, including Alaska Native subsistence practices. This expansion reflects a commitment to elevating Indigenous perspectives in subsistence governance and ensuring decisions are informed by traditional knowledge.

Regional Advisory Councils provide recommendations and information to the Board; review proposed regulations, policies and management plans; and provide a public forum for subsistence issues. Each Council consists of residents who are knowledgeable about subsistence and other uses of fish and wildlife resources in their region.

Another important element of the Federal Subsistence Management Program is fisheries research and monitoring. The Fisheries Resource Monitoring Program supports and funds research and monitoring projects that provide information needed for subsistence fisheries management and to ensure that regulatory decisions are based upon sound science. The Federal Subsistence Board, Regional Advisory Councils and fishery managers use this information when making regulatory

²² <https://www.doi.gov/subsistence>

²³ <https://www.federalregister.gov/documents/2024/10/17/2024-24088/subsistence-management-regulations-for-public-lands-in-alaska-subpart-b-federal-subsistence-board>

decisions. Projects funded by the program are carried out by numerous organizations, including the State and Federal government agencies, universities, Alaska Native and rural organizations, and private contractors.

6.4 Stock Assessment Activities

Salmon stocks in Alaska are managed by Stock Management Units (SMU). SMUs are composed of a variable number of biological stocks depending upon the similarity of productivity of the biological stocks and management capability. For example, in the Chignik Lakes there are two identified biological stocks of Sockeye Salmon, and each is managed separately based on run timing and spawning locations. In contrast, most pink salmon runs to individual river systems are aggregated into a SMU based proximity and similar productivity and because the individual biological runs cannot be managed separately. Examples of Pink salmon SMUs are the Northern and Southern Southeast Alaska SMUs.

The ADFG has compiled a comprehensive long-term database on salmon runs. The kinds of data collected depends on species and environmental conditions. For example, the statistics for Bristol Bay Sockeye Salmon include: 1) total numbers of fish returning that are caught and that spawn in each river system; 2) the size and age composition of both the catch and spawning escapement, in every river system; and 3) the timing when each run migrates through the various fisheries, when they enter each of each river system and when they spawn. Similar data is collected for most of the Sockeye and Chinook salmon stocks. By contrast, the typical data collected for pink salmon SMUs includes the catch aggregated in a fairly large area, aerial estimates of escapement in “index streams”, sex ratios of the catch and run timing.

ADFG utilizes a broad range data to make real time in-season estimates the number of fish returning each year to manage the fisheries. The exact type and source of the data used is dependent upon species and environmental conditions. Estimates of the commercial catch are based on sales records (fish tickets). The numbers of fish that have passed through the fishing areas to refuges established near and in the spawning areas are based on a variety of methods that may include aerial surveys, numbers passed through weirs, counting towers, sonar sites or mark-recapture sites. Sex ratios and age composition are often used to help interpret relative timing of the runs. In many areas the contribution of various biological stocks to the catch or escapement are estimated by a variety of methods including recovery of tags (microwire tags, otolith marking), genetic data and scale patterns. Test fishing sites are also employed to assess the run strength passing key locations when catch data are not yet available.

Alaska commercial salmon harvests are augmented in several areas by hatchery programs. Most of these hatchery programs are operated by private non-profit organizations. Commercial harvests of these enhanced salmon occur in traditional common property fishery areas that are managed solely based on wild stock abundance and in designated terminal areas where all the hatchery origin fish that have not been harvested in the traditional areas can be harvested without impacting wild runs. Virtually all hatchery produced salmon in Alaska are marked so that they may be identified when caught.

Escapement Goals

The basis for Alaska’s salmon management program is to ensure that a sufficient number of fish returning each year are allowed to spawn in order to provide a sustained yield. Alaska’s constitution Section 8.4 states “Fish, forests, wildlife, grasslands, and all other replenishable resources belonging to the State shall be utilized, developed, and maintained on the sustained yield principle, subject to preferences among beneficial uses.” Alaskan regulations specify the development and use of salmon escapement goals under two policies: the Policy for management of sustainable salmon fisheries (5 AAC 39.222) and the Policy of state-wide salmon escapement goals (5 AAC 39.223). There are four types of escapement goals: two types of goals are determined by ADFG, based solely on the best available biological information, and two types of goals are set by the BOF, that consider both biological and allocative factors.

ADFG is responsible for determining the **Biological Escapement Goal (BEG)** or **Sustainable Escapement Goal (SEG)** for a salmon stock, both of which are based on the best available biological information and are scientifically defensible. BEGs are set for all salmon stocks for which ADFG can reliably estimate both salmon escapement levels and total annual returns and provides for maximum sustained yield. BEGs are always set as a range based on stock productivity and data

uncertainty. SEGs are set for all salmon stocks for which ADFG can only reliably estimate or index salmon escapement and provides for sustained yield over a 5 to 10 year period. SEGs may be set as either a range or a lower bound based on data uncertainty. Additionally, ADFG, in consultation with the BOF, may set a **Sustained Escapement Threshold (SET)** for a stock of management or conservation concern. A SET is usually based on the lower range of historical escapement levels for which the salmon stock has consistently demonstrated the ability to sustain itself. A SET is below the lower bound of a BEG or SEG and represents a level of escapement below which the ability of the stock to sustain itself is jeopardized.

The BOF is responsible for determining an **Optimal Escapement Goal (OEG)** or an **In-River Run Goal**, which are both based on both biological and allocative factors. OEGs may differ from the SEG or BEG but must still be sustainable. OEGs may be set as a range, with the lower bound set above any existing SET. In-River Run Goals may be set for salmon stocks that are subject to harvest upstream of the point where escapement is estimated, and are comprised of the SEG, BEG, or OEG, plus specific allocations to in river fisheries. Unless the BOF has set either a OEG or in-river goal for a fishery, the primary management objective for escapement is either the BEG or SEG, and ADFG must seek to maintain evenly distributed salmon escapements within the bounds of escapement goal ranges or above lower bound SEGs.

Escapement goals are published annually in the Commercial Fisheries Division’s Annual Management Plans, Annual Management Reports, and similar documents. Commercial Fishery Division staff stationed in local areas have been delegated authority to summarily open and close fisheries based upon the information available to them at the time and within the context of pre-determined fishery management plans and preseason forecasts of salmon run abundance. This approach provides fishery enables managers to make quick decisions amid rapidly changing evaluation of the annual returns.

6.5 Historic Biomass and Removals in the Fishery

The statewide commercial harvest of salmon by species since 1985 (Figure 7) has ranged from about 90 million in 1987 to about 280 million in 2013. Pink and sockeye salmon comprise the majority of the annual harvest. Since 2013 the odd numbered years have produced significantly larger runs of pink salmon.

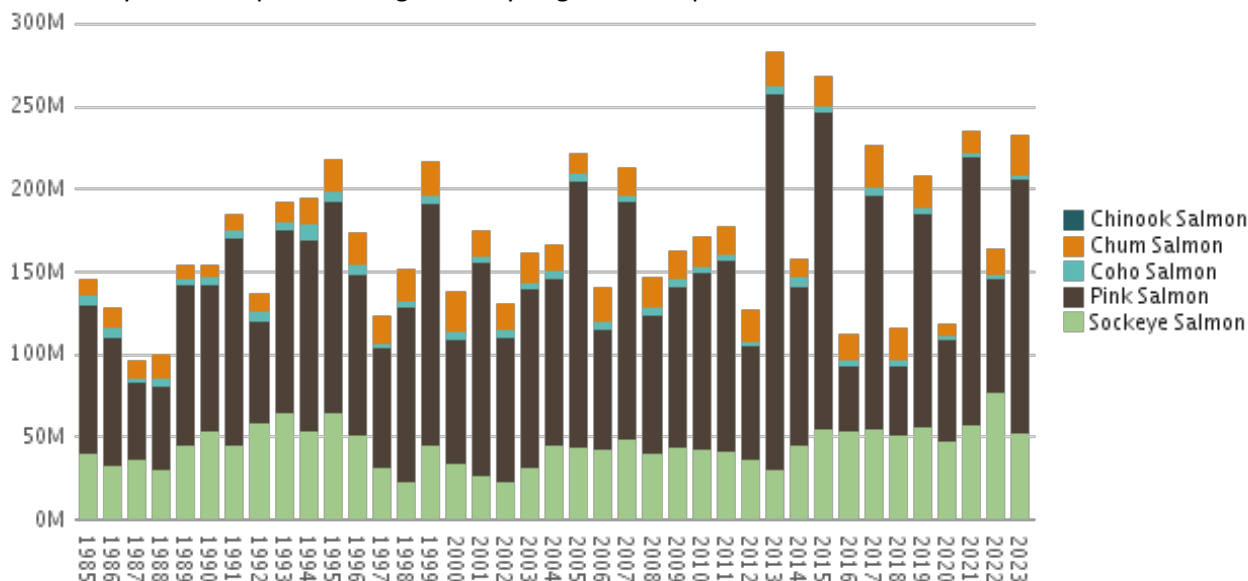


Figure 7. Alaska commercial salmon harvest by species 1985-2023²⁴.

²⁴ https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmon_grossearnings_byspecies

There are substantial differences in the species that dominate the catches by region (Table 8). Notably, Pink salmon make up a large proportion of the catch in Prince William Sound, Kodiak, Alaska Peninsula and Southeast. Sockeye Salmon tend to dominate the catch in Bristol Bay, Cook Inlet and Chignik. Chum Salmon dominate the catch in the Yukon, Arctic/Kotzebue, and Norton Sound/Port Clarence. Chinook Salmon is small proportion of the total catch in all areas. Coho Salmon are a significant proportion of the catch in only the Kuskokwim and Norton Sound/Port Clarence areas.

Table 8. The contribution each species made to the catch by area between 1985 and 2023 (percent of number of fish landed) ²⁵.

Area	Chinook	Chum	Coho	Pink	Sockeye
Alaska Peninsula/Aleutian Islands	0%	9%	2%	56%	32%
Arctic/Kotzebue	0%	100%	0%	0%	0%
Bristol Bay	0%	3%	0%	1%	96%
Chignik	0%	6%	5%	41%	49%
Cook Inlet	0%	5%	5%	28%	62%
Kodiak	0%	4%	1%	81%	13%
Kuskokwim	4%	33%	47%	1%	14%
Norton Sound/Port Clarence	3%	48%	33%	15%	0%
Prince William Sound	0%	7%	1%	87%	5%
Southeast/Yakutat	1%	17%	5%	75%	3%
Yukon	10%	81%	9%	0%	0%

In 2023, the total harvest was 232 million salmon (Table 9). Most of these fish were pink salmon (153.4 million) followed by Sockeye Salmon (51.9 million) and Chum Salmon (23.7 million).

Table 9. The 2023 commercial catch by area and species (number of fish) ²⁶.

Area	Chinook	Chum	Coho	Pink	Sockeye	Total
Alaska Peninsula/Aleutian Islands	12,587	1,226,216	206,696	17,199,390	2,899,795	21,544,684
Arctic/Kotzebue						
Bristol Bay	8,243	343,333	17,579	3,140	40,614,164	40,986,459
Chignik	2,297	109,695	52,644	2,143,701	1,069,702	3,378,039
Cook Inlet	1,103	165,820	83,125	2,759,585	1,923,633	4,933,266
Kodiak	10,417	828,156	265,803	24,739,646	2,561,251	28,405,273
Norton Sound/Port Clarence						
Prince William Sound	11,538	5,344,961	189,755	58,809,910	1,976,734	66,332,898
Southeast/Yakutat	200,646	15,721,448	1,794,355	47,817,278	927,689	66,461,416
Total Number	246,831	23,739,629	2,609,957	153,472,650	51,972,968	232,042,035

In 2023 the whole weight of the landed catch was 929.4 million pounds (Table 10). Pink salmon accounted for about half (468.9 million pounds) followed by Sockeye (288.7 million pounds) and Chum Salmon (153.2 million pounds).

²⁵ https://www.adfg.alaska.gov/static/fishing/pdfs/commercial/2023_preliminary_salmon_summary_table.pdf?form=MG0AV3

²⁶ https://www.adfg.alaska.gov/static/fishing/pdfs/commercial/2023_preliminary_salmon_summary_table.pdf?form=MG0AV3

Table 10. The 2023 commercial salmon catch by area and species (whole weight) ²⁷.

Area	Chinook	Chum	Coho	Pink	Sockeye	Total
Alaska Peninsula/Aleutian Islands	116,980	7,996,965	1,154,822	53,673,727	15,512,756	78,455,249
Arctic/Kotzebue						
Bristol Bay	87,265	2,046,426	103,104	10,226	228,283,571	230,530,592
Chignik	18,858	724,568	270,734	6,243,599	6,422,240	13,679,999
Cook Inlet	14,168	1,083,091	440,226	8,189,623	10,372,590	20,099,698
Kodiak	55,326	5,645,625	1,673,467	77,587,056	12,165,969	97,127,444
Norton Sound/Port Clarence						
Prince William Sound	179,574	33,506,258	1,448,278	176,714,758	10,690,603	222,539,471
Southeast/Yakutat	2,515,849	102,256,981	10,419,929	146,497,587	5,288,579	266,978,925
Grand Total	2,988,019	153,259,913	15,510,561	468,916,575	288,736,309	929,411,377

6.6 Economic Value of the Fishery

The ex-vessel value (price paid to fishers) of the Alaska commercial salmon harvest has averaged \$630 million over the last 10 years from an average annual harvest of 183 million salmon weighing 798 million pounds (Figure 8). Over the last ten years, sockeye accounted for over half (59%) of the total value followed by pink (19%), chum (14%), Coho (5%), and Chinook (3%). Recent values are among the largest on record although year-to-year fluctuations can be significant. Landings, catch composition and value varies substantially among regions (Table 11).

Detailed economic analysis of Alaska's salmon fisheries is undertaken routinely by ADFG and through contracted economic fishery specialists (e.g. McKinley Research Group) to inform management discussions and decisions on allocation and conservation.

²⁷ https://www.adfg.alaska.gov/static/fishing/pdfs/commercial/2023_preliminary_salmon_summary_table.pdf?form=MG0AV3

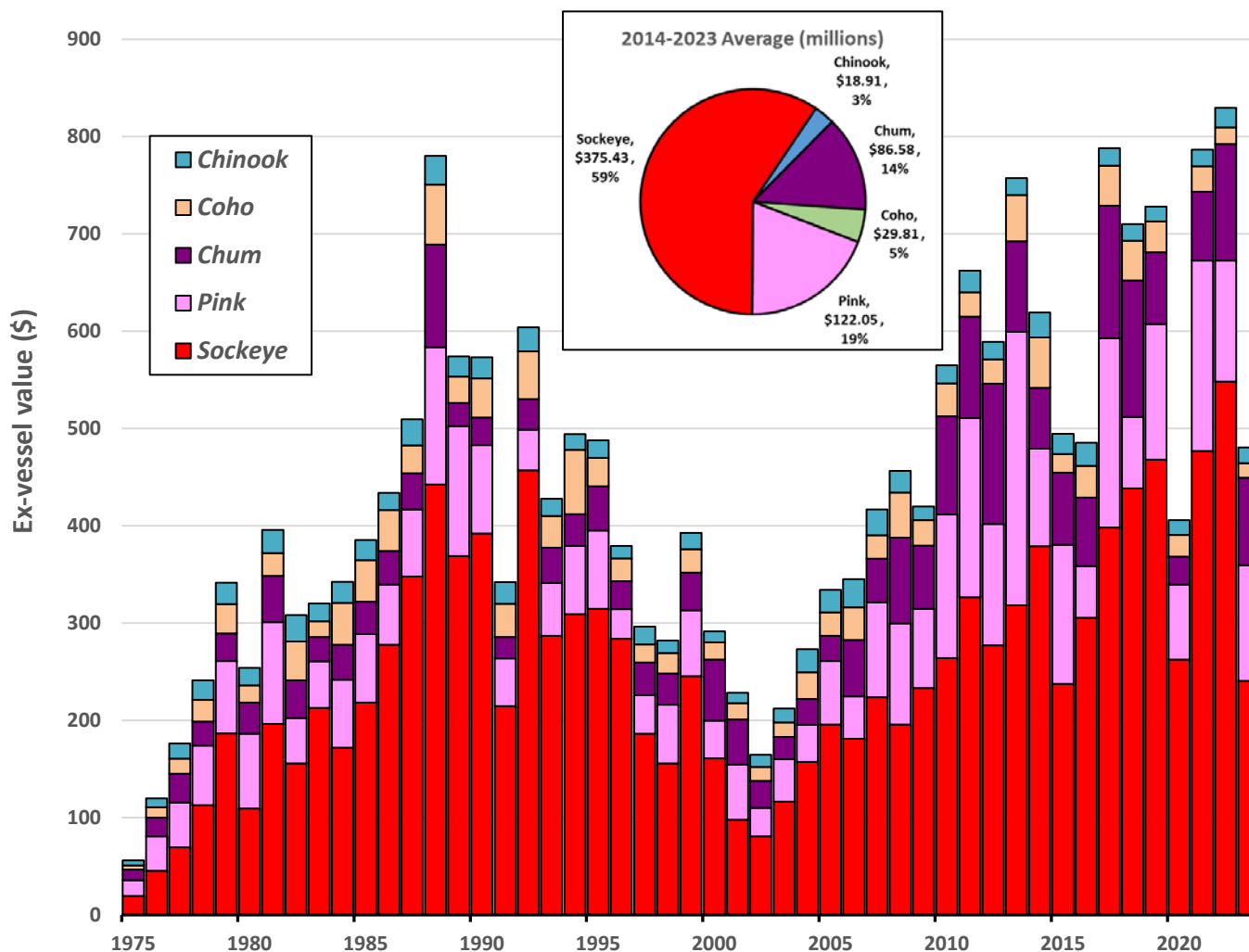


Figure 8 Ex-vessel value of the Alaska commercial salmon fishery harvest, 1975-2023.²⁸

²⁸ https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmon_grossearnings_byspecies

Table 11. Alaska commercial salmon harvests (numbers and pounds) and ex-vessel values, 2023.

Species	Av. Weight (lbs)	Av. Price per lb	Number (thousands)	Pounds (thousands)	Ex-vessel Value US\$ (thousands)
Southeast					
Chinook	11.1	\$6.33	198	2,196	13,898
Chum	6.6	\$0.67	15,025	98,519	66,470
Coho	5.4	\$1.25	1,792	9,736	12,170
Pink	3.1	\$0.27	47,785	146,372	39,929
Sockeye	5.7	\$1.24	925	5,229	6,487
<i>Totals</i>			65,725	262,052	138,954
Prince William Sound					
Chinook	15.3	\$11.71	12	177	2,072
Chum	6.3	\$0.54	5,129	32,231	17,375
Coho	7.6	\$1.21	185	1,412	1,705
Pink	3.0	\$0.27	57,052	172,296	46,279
Sockeye	5.3	\$1.63	1,977	10,561	17,181
<i>Totals</i>			64,355	216,677	84,612
Cook Inlet					
Chinook	12.7	\$4.01	1	14	55
Chum	6.5	\$0.51	165	1,074	553
Coho	5.2	\$0.66	82	429	283
Pink	3.0	\$0.22	2,730	8,135	1,792
Sockeye	5.4	\$1.23	1,912	10,266	12,641
<i>Totals</i>			4,890	19,918	15,324
Bristol Bay					
Chinook	10.6	\$0.89	8	85	75
Chum	5.9	\$0.26	341	2,011	526
Coho	5.8	\$0.30	18	102	31
Pink	3.2	\$0.07	3	10	1
Sockeye	5.5	\$0.79	40,569	224,699	177,516
<i>Totals</i>			40,939	226,907	178,149
Kodiak					
Chinook	5.3	\$0.36	10	55	20
Chum	6.8	\$0.36	828	5,644	2,047
Coho	6.3	\$0.30	266	1,673	505
Pink	3.1	\$0.23	24,742	77,596	17,864
Sockeye	4.7	\$0.87	2,558	12,144	10,518
<i>Totals</i>			28,404	97,112	30,954
Chignik					
Chinook	8.2	\$0.16	2	19	3
Chum	6.6	\$0.22	110	725	159
Coho	5.1	\$0.24	53	271	65
Pink	2.9	\$0.18	2,144	6,244	1,115
Sockeye	6.0	\$0.72	1,070	6,422	4,598
<i>Totals</i>			3,379	13,681	5,940
AK Peninsula / Aleutian Is					
Chinook	9.3	\$1.30	12	114	148
Chum	6.5	\$0.27	1,212	7,906	2,152
Coho	5.6	\$0.27	204	1,141	305

Table 11. Alaska commercial salmon harvests (numbers and pounds) and ex-vessel values, 2023.

Species	Av. Weight (lbs)	Av. Price per lb	Number (thousands)	Pounds (thousands)	Ex-vessel Value US\$ (thousands)
Pink	3.1	\$0.23	17,119	53,384	12,046
Sockeye	5.3	\$0.75	2,880	15,405	11,490
Totals			21,427	77,950	26,141
Kuskokwim					
Totals			0	0	0
Yukon					
Totals			0	0	0
Norton Sound					
Totals			0	0	0
Kotzebue					
Totals			0	0	0
ALASKA TOTALS					
Chinook	10.9	\$6.12	243	2,660	16,271
Chum	6.5	\$0.60	22,810	148,110	89,282
Coho	5.7	\$1.02	2,600	14,764	15,064
Pink	3.1	\$0.26	151,575	464,037	119,026
Sockeye	5.5	\$0.84	51,891	284,726	240,431
Totals			229,119	914,297	480,074

6.7 Overview of the Alaska Salmon Hatchery Program

6.7.1 Hatchery Program History

Alaska salmon numbers are enhanced by significant hatchery production, particularly in Southeast Alaska and Prince William Sound (Wilson 2024). Alaska's modern hatchery program began in 1971, when the Alaska Legislature established the Division of Fisheries Rehabilitation, Enhancement and Development (FRED) within the Alaska Department of Fish and Game (ADF&G)²⁹ (Stopha, 2019). Alaska's modern hatchery program was developed in response to historically low salmon abundance in the early 1970s (Figure 5). In 1972, Alaska voters amended Article 8, section 15 of Alaska's Constitution to provide tools for restoring and maintaining the state's fishing economy. The amendment provided an exemption to the "no exclusive right of fishery" clause in the state constitution, enabling limited entry to Alaska's state fisheries and allowing broodstock and cost-recovery harvest for hatcheries. Alaska's salmon hatchery program developed under this authority and was designed to supplement—not replace—sustainable natural production. Alaska's salmon fishery harvests were just 22 million fish in 1973 and 1974.

The FRED Division, PNP hatcheries, and other agencies such as the US Forest Service, engaged in a variety of activities to increase salmon production. New hatcheries were built to raise salmon. Fish ladders were constructed around barriers to provide adult salmon access to new spawning and rearing areas. Lakes with waterfall outlets too high for adult salmon to ascend were stocked with salmon fry. Log jams were removed in streams to enable returning adults to reach spawning areas. Nursery lakes were fertilized to increase the available feed for juvenile salmon.

In 1974, the Alaska Legislature expanded the hatchery program, authorizing private nonprofit (PNP) corporations to operate salmon hatcheries:³⁰

It is the intent of this Act to authorize the private ownership of salmon hatcheries by qualified nonprofit corporations for the purpose of contributing, by artificial means, to the rehabilitation of the state's depleted and depressed salmon fishery. The program shall be operated without adversely affecting natural stocks of fish in the state and under a policy of management which allows reasonable segregation of returning hatchery-reared salmon from naturally occurring stocks. This means that PNP hatcheries have a fishery enhancement objective and hatchery permits are issued for production-scale hatcheries.

The State of Alaska funded the construction of 18 hatcheries between 1969 and 1983 with general obligation bonds. The hatcheries were initially operated by ADF&G FRED Division. PNP corporations began building hatcheries in the mid-1970s. In 1988, the legislature passed an act that allowed state hatcheries to be operated by PNP hatchery corporations (AS 16.10.480). By the mid-1990's, most State-run salmon aquaculture facilities were taken over by the private non-profit (PNP) sector. State aquaculture facilities that primarily produced fish caught in sport fisheries were transferred to the Division of Sport Fish and by the later 1990's, the Commercial Fisheries Division neither funded nor operated salmon hatcheries. The Division of Commercial Fisheries continued to provide technical support to all of the salmon aquaculture facilities operated in Alaska such as was provided by FRED Division while in existence, for example, disease screening and production evaluation. The PNP corporations hold their own hatchery permits to operate the facilities and are responsible for funding hatchery operations.

6.7.2 Hatchery Production

Thirty hatcheries operated in Alaska during 2023 (Figure 9). PNPs operate 26 of these: 11 facilities owned by the state and 15 owned by PNPs. ADF&G Division of Sport Fish operates two additional state-owned hatcheries in Anchorage and Fairbanks. The Metlakatla Indian Community on the federal Annette Islands Reserve south of Ketchikan operates Tamgas Creek Hatchery. The National Marine Fisheries Service operates a federal research hatchery at Little Port Walter in lower Chatham Strait in Southeast Alaska. An additional four PNP hatchery facilities are permitted but currently inactive: Perry

²⁹ <http://www.adfg.alaska.gov/FedAidPDFs/RIR.5J.2019.01.pdf>

³⁰ Alaska Leg. 1974. Act authorizing the operation of private nonprofit salmon hatcheries. Sec. 1, Chapter 111, SLA 1974, in the Temporary and Special Acts.

Island Hatchery (Prince William Sound), Little Port Walter operated by Armstrong Keta Incorporated (Southeast), Eklutna Hatchery (Eklutna) and Haines Projects Sites (Haines).

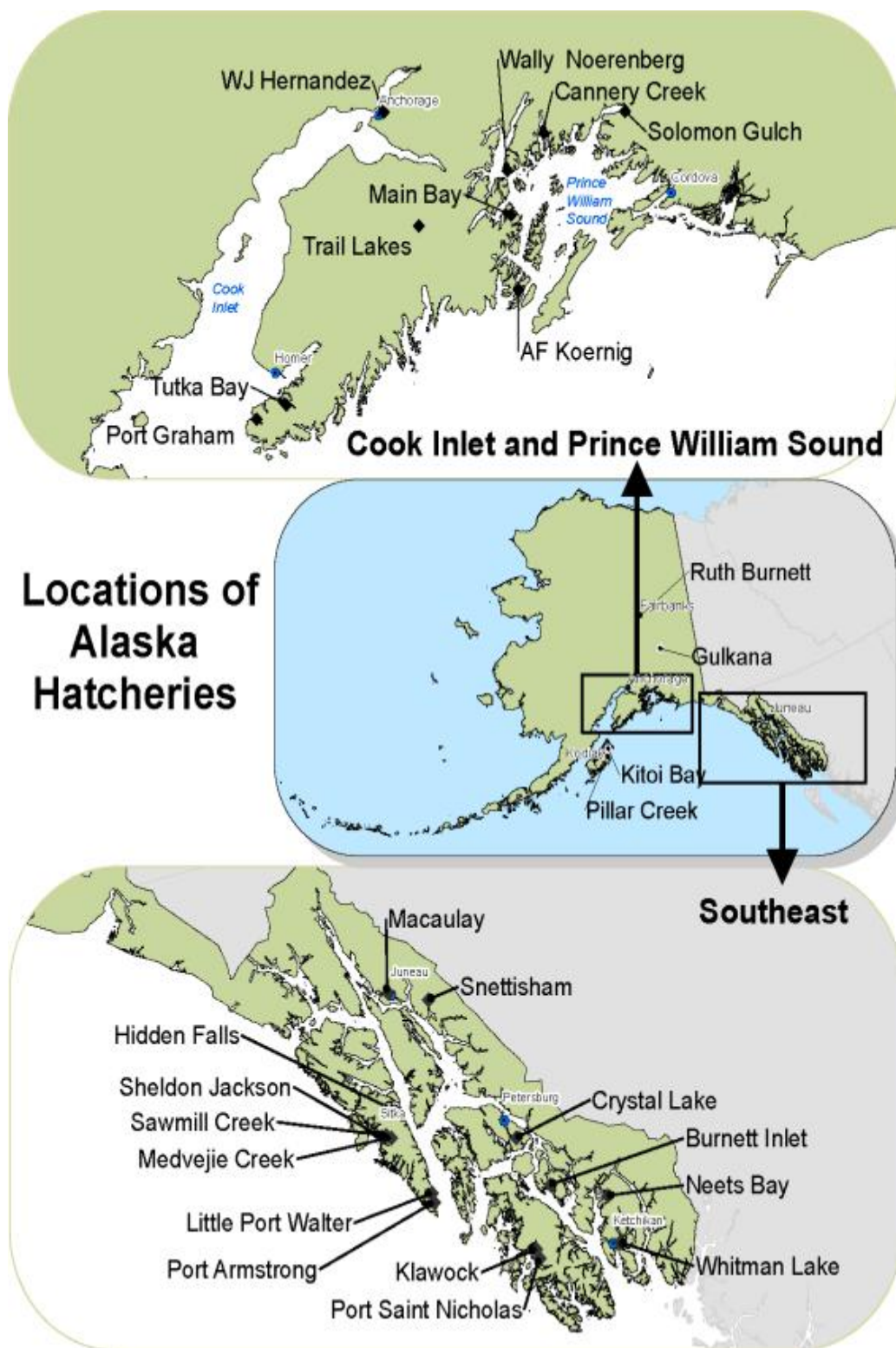


Figure 9. Salmon hatcheries currently operating in Alaska (Source:Wilson 2024).

Current Alaska hatchery releases are approximately 1.9 billion fry per year (Table 12, Figure 10). Pink and Chum Salmon are the predominant species produced by Alaska hatcheries, followed by Sockeye, Coho, and Chinook Salmon. Pink and Chum are preferred as the fry migrate to salt water soon after hatching resulting in less cost compared to the other species which require being held and fed in fresh water for an additional year. Prince William Sound (48%) and Southeast Alaska (38%) account for the large majority of Alaska hatchery production (Table 12).

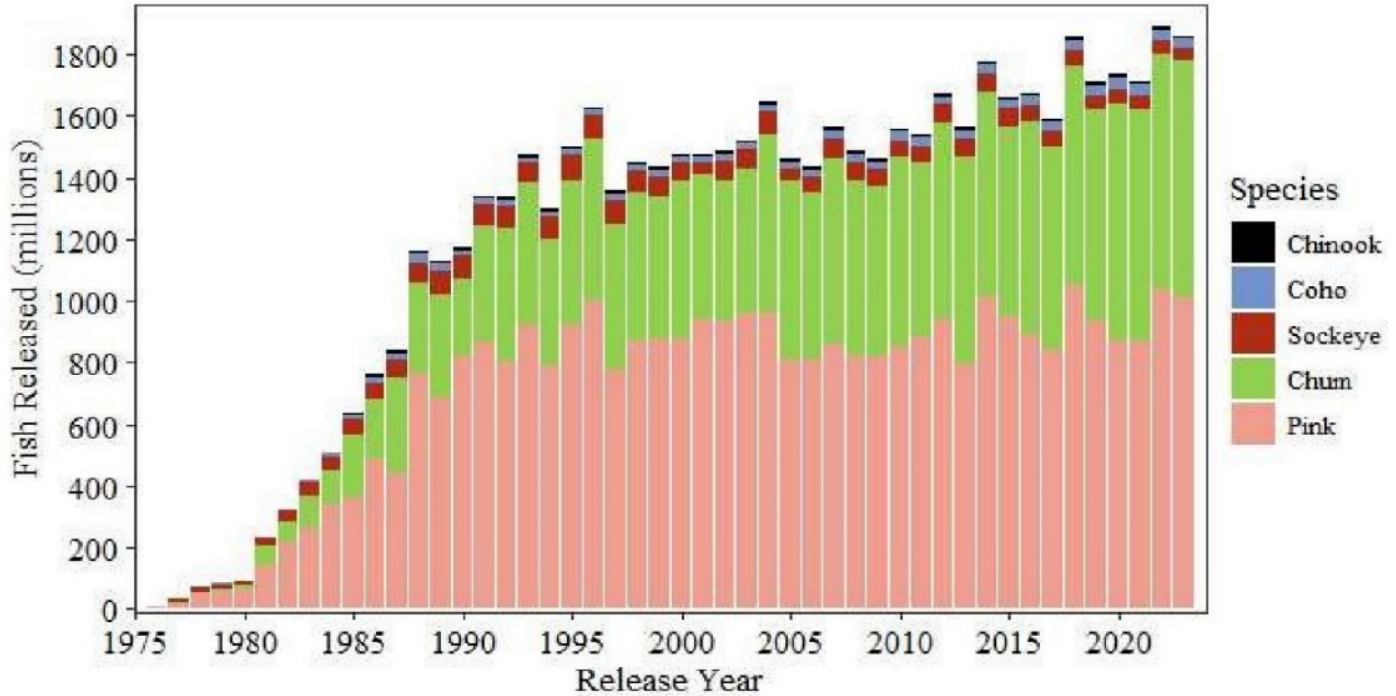


Figure 10. Annual releases of hatchery fish in Alaska by species (Source:Wilson 2024).

Permitted hatchery capacity for egg take has been approximately 2.5 billion since 2019 (Figure 11). Permitted capacity is currently greater than the annual egg takes of approximately 2 billion. Changes in permit allowances over the last 10 years have been relatively small and addressed operator desire to better meet the needs of their constituents and operational constraints such as broodstock availability. Among those changes have been increases in Chum Salmon production in Southeast and in pink salmon releases in Lower Cook Inlet as the operators strive to rebuild production to the permitted level.

Table 12. Estimated juvenile salmon releases from Alaska hatcheries by region, 2023 (Source:Wilson 2024).

Area	Chinook	Sockeye	Coho	Pink	Chum	Total
Southeast	7,261,652	13,136,100	25,741,166	61,230,372	607,078,640	714,447,930
Prince William Sound	223,336	13,314,031	3,742,165	739,441,201	132,194,513	888,915,246
Cook Inlet	2,032,605	4,986,865	1,561,076	21,017,854	0	29,598,400
Interior	39,649	0	119,288	0	0	158,937
Kodiak	46,503	3,844,287	1,082,732	191,750,551	29,718,848	226,442,921
Total	9,603,745	35,281,283	32,246,427	1,013,439,978	768,992,001	1,859,563,434

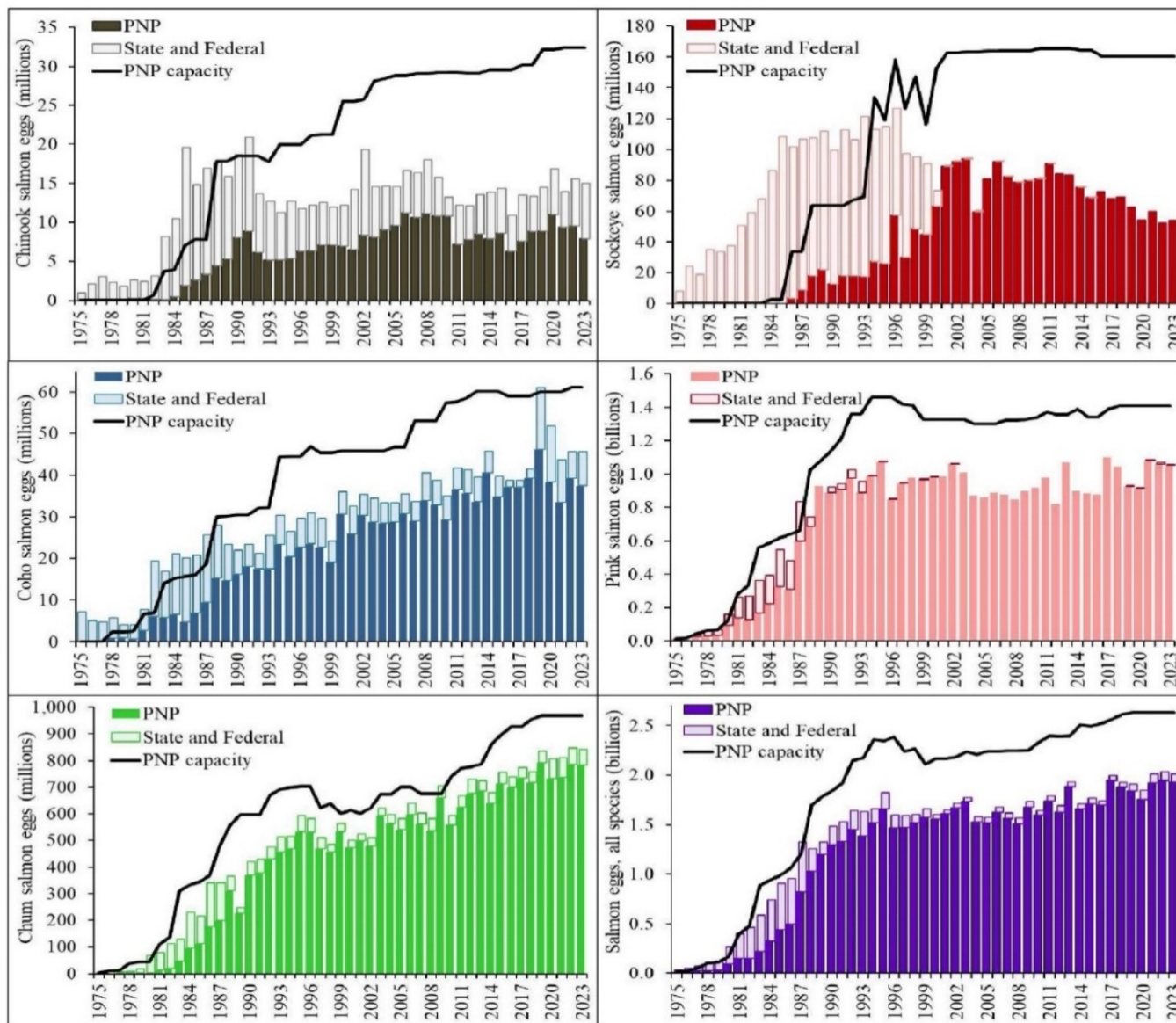


Figure 11. Salmon eggs collected at by PNP hatcheries and by state and federal hatcheries, and PNP hatchery permitted capacity by species and total, 1975–2023 (Source: Wilson 2024).

6.7.3 Hatchery Policies

Alaska has adopted a complex of policies and regulations designed to minimize the potential for adverse effects of the enhancement program on wild stocks (Evenson et al. 2018). The Alaska state constitution, statutes, and regulations mandate that ADF&G manage salmon returns for wild stock conservation (Wilson 2024). The Alaska Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222), the Policy for the Management of Mixed-Stock Salmon Fisheries (5 AAC 39.220), the Salmon Escapement Goal Policy (5 AAC 39.223), and local fishery management plans (5 AAC 39.200) guide fisheries management for the protection of wild salmon stocks. Related guidance is also provided by the PNP Hatchery Permitting Statute, the Regional Planning Statute 1976, the BOF Hatchery Management Policy, Fish Transport Regulations 1981, the PNP Regulations 1985, the Pathology Policy 1988, Wild and Enhanced Stock Statute 1992, Sockeye Salmon Culture Policy 1994.

The Policy for Management of Sustainable Salmon Fisheries directs that effects and interactions of introduced or enhanced salmon stocks on wild salmon stocks should be assessed; wild salmon stocks and fisheries on those stocks be protected from adverse impacts from artificial propagation and enhancement efforts; and 'plans and proposals for development or expansion of salmon fisheries and enhancement programs should effectively document resource assessments, potential impacts, and other information needed to assure sustainable management of wild salmon stocks.'

The ADF&G Genetic Policy sets out restrictions and guidelines for stock transport, protection of wild stocks, and maintenance of genetic diversity (Davis et al. 1985; Davis & Burkett 1989). The policy restricts import and transportation of stocks between the major geographic areas; requires use of local broodstock; directs use of large populations of broodstock collected across the entire run and without regard to any physical trait such as size; and limits use of individual donor stocks. Related requirements also include locating hatcheries away from significant wild stocks; priority for wild stocks in fisheries; provisions for marking of hatchery fish; and as necessary, requirements for special studies on hatchery/wild stock interactions.

A state-wide fish health program also provides hatchery oversight with a primary objective of wild fish protection. The state operates two laboratories providing services for state and private non-profit hatcheries. This program also administers associated regulations and a disease policy guiding responses to any outbreaks which might occur. The program conducts routine surveillance, training and diagnostic services in the case of outbreaks (which are rare in the Alaska hatchery system).

6.7.4 Permitting and Planning Procedures

Private non-profit hatchery programs in Alaska are subject to extensive regulatory oversight by ADF&G on an annual basis under the authority of the Commissioner. This oversight is facilitated by advisory review of Regional Hatchery Planning Teams in a public process. The Regional Planning Team Review Regulation (5AAC 40.170) provides review criteria which must be considered and include provisions for the protection of the naturally occurring stocks from any adverse effects which may originate from a proposed hatchery. Fishery managers are required to consider the interactions of wild and hatchery salmon stocks when reviewing hatchery management plans and permits. Annual management plans detailing production and returns are prepared by operators for review and approval. All hatchery releases are also subject to fish transport permit requirements. Any new production proposals are subject to new permit applications - new permit applications are not approved if inconsistent with established policies for wild fish protection.

Regional aquaculture associations (RAAs) exist for many of Alaska's salmon planning regions. Where RAAs operate hatcheries, they also form PNP corporations and have a board of directors whose membership is composed of commercial salmon fishing permit holders and representatives of other stakeholder groups such as sport and subsistence harvesters, processors, and city officials.³¹ PNP boards establish hatchery production goals and oversee business operations.

Salmon fishery enhancement efforts are guided by comprehensive salmon plans for each region. These plans are developed by Regional Planning Teams (RPT). RPTs are composed of 6 voting members: 3 from ADF&G and 3 appointed by the RAA's board of directors. Plans are developed in a public process based on the needs of fishery user groups and communities of the region. The plans can be reviewed and updated to meet changing needs.

Commercial salmon fishing permit holders may vote to impose a salmon enhancement tax on sale of salmon in their region. These funds are collected by the state and distributed to the RAA to finance hatchery operations or other enhancement and rehabilitation activities. Independent PNP corporations, not affiliated with an RAA, also operate hatcheries in several areas of the state. The RAAs and independent PNP hatchery organizations may contract processors to harvest hatchery salmon in designated areas to pay for operations. Such harvests are called cost-recovery fisheries, in contrast to common property fisheries, which are fisheries open to all qualified commercial, subsistence, personal use, and sport harvesters.

³¹ <http://www.adfg.alaska.gov/FedAidPDFs/RIR.5J.2019.01.pdf>

Each hatchery is permitted separately. Acquisition of a hatchery permit is an extensive process (5 AAC 40.110– 40.230). A hatchery application consists of production goals, hatchery site information, water flow, water chemistry data, land ownership, water rights, hatchery design, initial proposed broodstock for the hatchery, and a financial plan. ADF&G staff draft a fishery management feasibility analysis for the proposed hatchery. ADF&G staff review the application with the applicant, who addresses any deficiencies. The application is then provided for public review.

The RPT reviews hatchery permit applications within their region to determine if the hatchery operation is compatible with the regional comprehensive salmon plan. The RPT also makes a recommendation on the permit to the ADF&G commissioner. Following review by the RPT, a public hearing for the hatchery permit is held. The hatchery applicant describes the proposed hatchery plan, and ADF&G staff present the basic management plan (described below) for the hatchery. Public testimony and questions follow the presentations. ADF&G must respond in writing to any specific objections to the proposed permit.

The application is then sent to the ADF&G commissioner for final review. By regulation (5AAC 40.220) the commissioner's decision is based on consideration of (1) the suitability of the site for making a reasonable contribution to the common property fishery, not adversely affecting management of wild stocks, and not requiring significant alterations of traditional fisheries; (2) the operation of the hatchery makes the best use of the site's potential to benefit the common property fishery; (3) the harvest area size at the hatchery is sufficient in size to provide a segregated harvest of hatchery fish of acceptable quality for sale; (4) proposed donor sources can meet broodstock needs for the hatchery for the first cycle; (5) water sources for the hatchery are secured by permit and are of appropriate quality and quantity; and (6) the hatchery has a reasonable level of operational feasibility and an acceptable degree of potential success. Hatchery permits cannot be transferred. When hatcheries change operators, a new permit must be issued by the process described above. Alaska PNP hatcheries operate under 4 documents: PNP hatchery permit with basic management plan (BMP), annual management plan (AMP), fish transport permit (FTP), and annual report. The hatchery permit and BMP, AMP, and FTP must be approved by the ADF&G commissioner.

The hatchery permit authorizes operation of the hatchery and specifies the species permitted to be produced. The BMP, an addendum to the hatchery permit, specifies the maximum number of eggs of each species that a facility can incubate, the authorized release locations, and may identify stocks for broodstock. Hatchery permits remain in effect unless relinquished by the permit holder or revoked by the ADF&G commissioner. Hatchery permits and BMPs may be amended by the permit holder through a permit alteration request. Requested changes are reviewed by the RPT and ADF&G staff and recommendations are sent to the ADF&G commissioner for consideration. The AMP outlines operations for the current year and is written cooperatively among ADF&G and PNP hatchery staff. Typically, AMPs include the current year's egg-take goals, juvenile releases and remaining inventory, expected adult returns, harvest management plans, FTPs (described below) required or in place, production strategies, and evaluation plans. The AMP must be consistent with the hatchery permit and BMP. Final consideration of the plan is made by the ADF&G commissioner.

An FTP is required for egg collections, transports, and releases. The FTP authorizes specific activities described in the hatchery permit and management plans including broodstock sources, gamete collections, and release sites, and must be consistent with the PNP Permit and BMP. FTP applications are reviewed by the ADF&G fish pathologist, fish geneticist, regional resource development biologist, and other ADF&G staff as delegated by the ADF&G commissioner. Reviewers may suggest conditions for the FTP. Final consideration of the application is made by the ADF&G commissioner. An FTP is issued for a fixed time period. When an FTP is renewed or amended, the FTP application goes through the same process as the original FTP, providing an ongoing review of all PNP hatchery projects over time. Each hatchery is required to submit an annual report documenting broodstock collection, egg take numbers, releases, returns, and projected run sizes for the following year. Information from all hatchery annual reports is compiled into this annual report to the Alaska Legislature.

ADF&G Sport Fish hatcheries in Anchorage and Fairbanks produce fish specifically for sport fisheries in Cook Inlet, Resurrection Bay, Prince William Sound, and the Interior. The hatcheries are primarily funded from the federal excise tax on fishing-related equipment under the Dingell - Johnson Sport Fish Restoration Act.

A series of hatchery evaluations from 2011-2017 examined individual hatchery programs throughout the state for consistency with policies and prescribed management practices (Stopha 2012a, 2012b, 2013a, 2013b, 2013c, 2013d, 2013e, 2013f, 2013g, 2014a, 2014b, 2014c, 2015a, 2015b, 2015c, 2015d, 2015e, 2015f, 2016b, 2016c, 2016d, 2017a, 2017b; Stopha & Musslewhite 2012; Musslewhite 2011a, 2011b). Evaluations reviewed hatchery management plans and permits, assessed program consistency with statewide policies, and identified remedies for any deficiencies found. Management plans and permits were examined for currency, consistency with each other, and accuracy of hatchery operation descriptions. Programs were generally found to be in compliance and issues were addressed as identified.

Evenson et al. (2018) completed a comprehensive review of procedures, practices, fishery management, and stock assessment relevant to the hatchery program for consistency with precautionary plans, permits, and policies that have guided salmon enhancement in Alaska in a manner that protects wild stocks. The review particularly focused on case studies for Southeast Alaska Chinook Salmon and Prince William Sound Pink Salmon. In general, this review concluded that implementation of Alaska's policies, plans, and permits for the test cases were largely consistent with a precautionary approach. Fishery and hatchery management strategies have generally been demonstrated to be effective in differentially harvesting hatchery fish at a substantially greater rate than wild fish while continuing to meet wild spawning escapement goals. The evaluation also identified recommendations for improvements including clarification of the several elements of the genetic policy, improved communication to regulatory bodies and stakeholders, and the need for continuing basic research to better understand homing and effects of straying.

An independent policy analysis of Alaska salmon hatcheries by Eller (2018) similarly concluded that the policy in place does an effective job at minimizing risk and ensuring sustained runs of wild salmon overall. This assessment also identified questions regarding interpretation and guidance for implementation of precautionary management and the genetic policy, research on straying and other effects of hatchery salmon, and the involvement of stakeholders in the decision-making process.

6.7.5 Hatchery Values

PNP hatchery operations are primarily funded by cost-recovery harvest and assessment taxes on the commercial salmon harvest and are a significant sector of the commercial fishing industry in parts of coastal Alaska. In fiscal year 2018, the operation budgets for all PNP hatcheries in the state totaled about \$46 million. Between 2018 and 2023, commercial fishermen harvested an annual average of 170 million pounds of hatchery-produced salmon worth \$102 million in ex-vessel value, the gross revenue earned by fishermen.³² The regional benefits of hatchery production are broad, including \$51 million in annual average harvest value in Prince William Sound, \$42 million in Southeast, \$8 million in Kodiak, and about \$0.6 million in Cook Inlet. Hatchery fishery contributions had an estimated ex-vessel value of \$131 million in 2023 and accounted for 33% of the statewide commercial harvest ex-vessel value (Wilson 2024).

6.7.6 Hatchery Management

The Alaska state constitution, statutes, and regulations mandate that ADF&G manage salmon returns for wild stock conservation (Evenson et al. 2018; Wilson 2024). This means that escapement goals are established for important salmon systems, and the fisheries are managed to meet these goals. Wild and hatchery returns are managed to meet wild stock escapement goals. In some cases, two species of hatchery fish return at the same time as other, more predominant wild stock species, and the hatchery fish are harvested as incidental catch. For example, in Southeast Alaska, hatchery-produced chum salmon return across the timing of both sockeye and pink salmon and are caught during fisheries that are managed for sockeye or pink salmon. Chum salmon that are not harvested in the sockeye and pink salmon fisheries return to isolated release sites in bays where they can be harvested with minimal impact to wild stocks.

For some fisheries, both hatchery and wild stocks of the same species return simultaneously. In Prince William Sound, hatchery stocks of pink salmon return at the same time as the wild pink salmon stocks they are derived from. All hatchery-

³² https://www.adfg.alaska.gov/static/fishing/PDFs/hatcheries/50th_year_alaskahatchery_economic_impact_report.pdf

produced pink salmon are otolith marked. Otoliths are read from samples of fish collected from the commercial fishery to apportion the catch between hatchery and wild stocks during the season so that managers can manage for the wild stock return. In the Kenai River, releases of hatchery sockeye salmon are limited to a small fraction of the wild populations so that they do not unduly influence management.

In Southeast Alaska, a percentage of both hatchery and wild stocks of coho and Chinook salmon are coded-wire-tagged. Tags are collected and read during the season so that managers can assess the wild and hatchery components of the return to assess wild stock abundance. Hatchery stocks of pink and chum salmon are otolith marked as well. In Kodiak, hatchery chum and sockeye salmon stocks are otolith marked. Only a portion of hatchery-produced pink salmon are marked, but return to the release site on Afognak Island where there are no substantial wild pink salmon stocks in the area. All pink salmon fishery openings in this area target hatchery-produced salmon.

Fishery management strategies are designed and implemented to harvest hatchery salmon at high rates while also protecting escapements of wild stocks. Hatcheries are sited in terminal areas which facilitate targeted harvest of returning adults. In high enhancement areas such as Prince William Sound, in-season monitoring of hatchery-wild composition based on otolith sampling is used to maximize harvest of hatchery-origin salmon. Comprehensive marking of Alaska hatchery production has been implemented to facilitate assessment of hatchery contributions to harvest and natural spawning escapements (Figure 12).

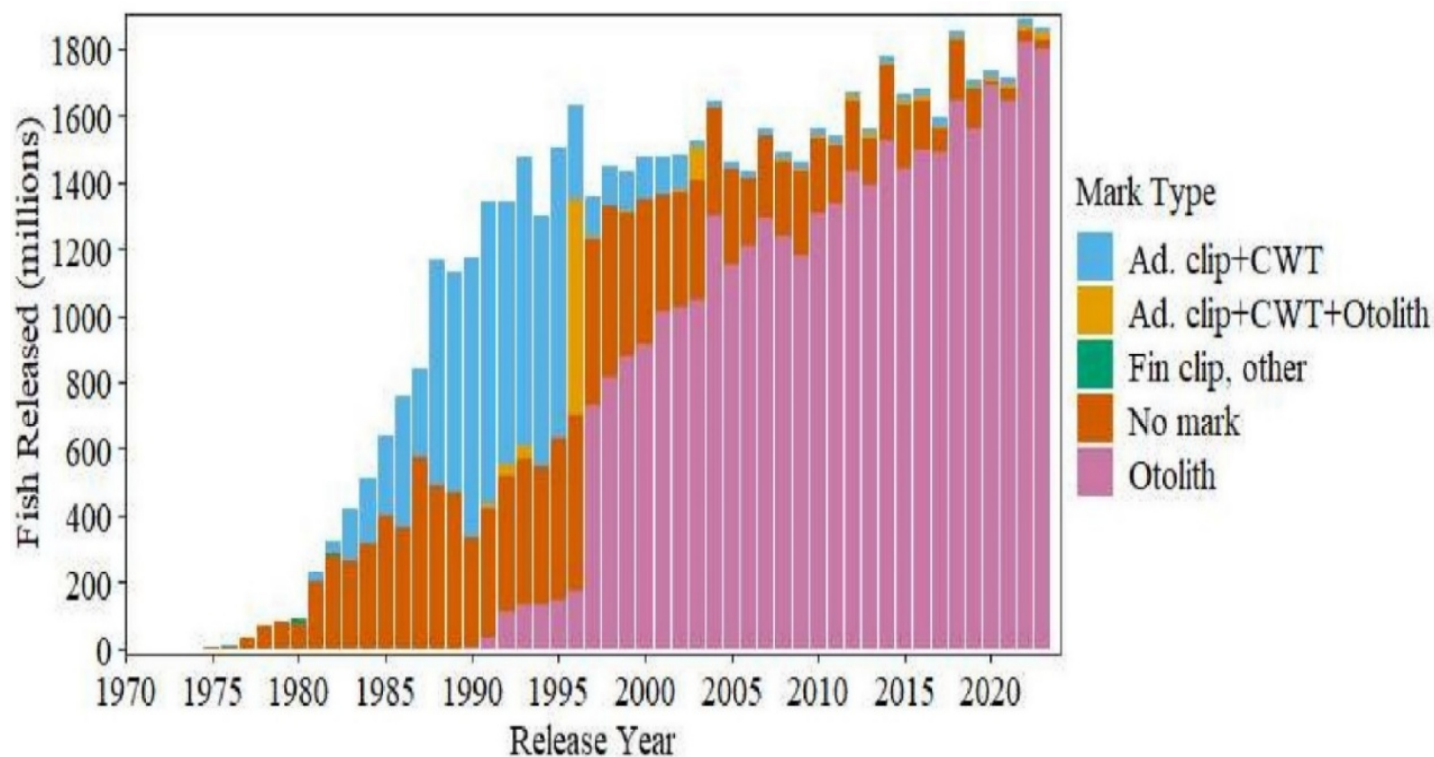


Figure 12. Alaska hatchery juvenile salmon releases by mark type (Source:Wilson 2024).

6.7.7 Hatchery Contribution to Fisheries

Annual assessments of hatchery contributions to the fishery harvest are made ADF&G in conjunction with private nonprofit hatchery operators based on comprehensive marking of hatchery production and mark sampling of the commercial fisheries (Thynes et al. 2022; Wilson 2024). Hatcheries contributed about 40 million salmon per year and comprised about 30% of the total commercial salmon harvest in Alaska (Figure 13).

In Southeast Alaska, hatcheries contributed 92% of the 2023 commercial harvest of Chum Salmon (Wilson 2024). Hatcheries contributed 34% of the coho, 23% of the Chinook, 11% of the sockeye, and 3% of the pink salmon, in numbers of fish, to 2023 commercial fisheries by species.

In Prince William Sound, hatcheries contributed 84% of Chum Salmon, 82% of pink salmon, 41% of sockeye, 10% of coho, and <1% of the Chinook, in numbers of fish, to 2023 commercial fisheries by species (Wilson 2024).

In Cook Inlet, hatcheries contributed 77% of Pink salmon, 10% of sockeye, and <1% of chum, coho, and Chinook, in numbers of fish, to 2023 commercial fisheries by species (Wilson 2024).

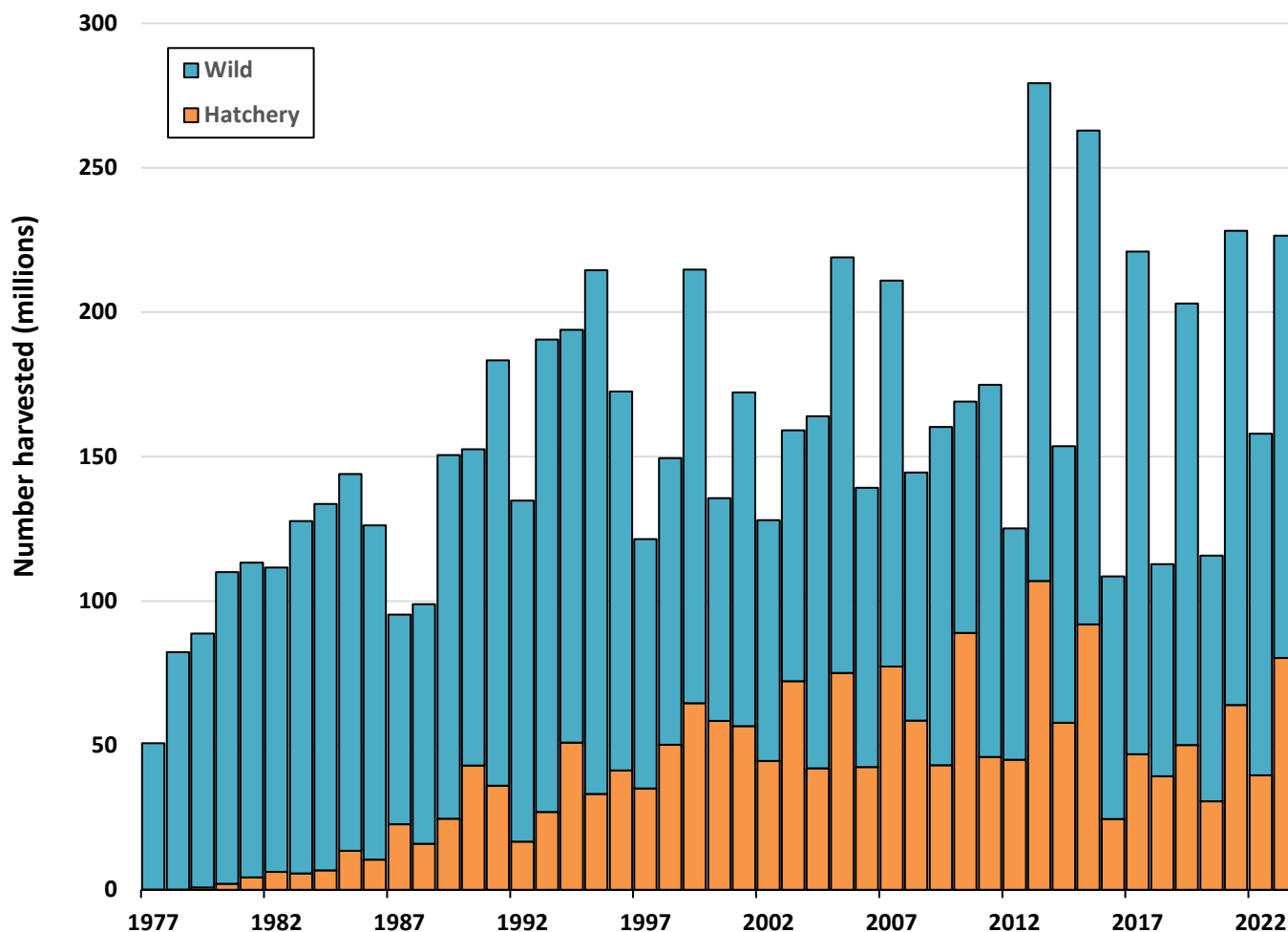


Figure 13. Hatchery and wild contributions to commercial (common property and hatchery cost recovery) salmon harvest (Source: data from Wilson 2024).

7 Assessment Process

This Assessment constitutes an evaluation of the applicant fisheries' management systems against the conformance criteria outlined in the Responsible Fisheries Management Fisheries RFM Fisheries Standard Version 2.1.

7.1 Scoring

Each clause of the RFM Fishery Standard v.2.1 is scored based on defined process which Certification Bodies are required to follow. The process is described in brief below and is also outlined in detail in the relevant scheme documents (See [Details of Applicable CSI Documents](#) for further details).

7.1.1 Evaluation Parameters

Evaluation Parameters (described below), which effectively break down each clause using defined performance related parameters, form the basis of scoring.

Process Evaluation Parameter

Requires that evidence is provided outlining the process or system used by a fishery management organization to implement or maintain key aspects of fishery management practices, such as systems for data collection, laws and regulations, stock assessments, and enforcement. If evidence on the current process/system of a given process-based requirement is scarce or non-existent, then this Evaluation Parameter is not satisfied.

Current Status/Appropriateness/Effectiveness Evaluation Parameter

Requires that the current status, appropriateness, or effectiveness of an element of fisheries management practices (depending on which one of these attributes is most relevant to a given clause) is demonstrated, such as data collected, results of stock assessment including stock status, and enforcement data. If evidence on the current status, appropriateness, or effectiveness of a given output-based requirement is scarce or non-existent, then this Evaluation Parameter is not satisfied.

Evidence Basis EP

Requires that the availability, quality, or adequacy of the evidence that is the base for scoring a given clause is assessed. If evidence availability (such as studies, reports, other data, and regulations) is scarce, low quality or non-existent, then this Evaluation Parameter is not satisfied.

7.1.2 Numerical Scoring based on Evaluation Parameters

Confidence Ratings and Conformance Levels for each Clause are determined based on the following process:

1. Numerical scoring is effectively a reverse process with each applicable Clause starting out the maximum possible overall score of 10.
2. The Assessment Team is then required to subtract 3 from that total for each Evaluation Parameter not met to reach an overall numerical score for that Clause
3. The Clause is then assigned both a Confidence Rating and an overall Conformance Level based on its overall numerical score as follows:

Overall Score	Confidence Rating	Conformance Level
10	High	Full Conformance
7	Medium	Minor Non-conformance
4	Medium	Major Non-conformance
1	Low	Critical Non-conformance

7.1.3 Confidence Ratings and Non-conformances

Based on the numerical scoring process described above, clauses of the fisheries standards are assigned Confidence Ratings and Conformance Levels—these are intended to reflect the below descriptions.

- **Critical Non-Conformance – Low Confidence Rating**

Information/evidence is completely absent or contradictory to demonstrate conformance to a clause. Absence of information/evidence results in a low confidence rating. In these cases, a critical non-conformance is assigned.

- **Major Non-Conformance – Medium Confidence Rating**

Information/evidence to demonstrate conformance to a clause is limited. In these cases, a major improvement is needed to achieve full conformance. A medium confidence rating with a major non-conformance is assigned.

- **Minor Non-Conformance – Medium Confidence Rating**

Information/evidence is broadly available to demonstrate conformance to a clause although there are limited gaps in information that, if available, could clarify aspects of conformance and allow the assessment team to assign a high confidence rating. In these cases, a minor improvement is needed to achieve full conformance. A medium confidence rating with a minor non-conformance is assigned.

- **Full Conformance – High Confidence Rating**

Sufficient information/evidence is available to demonstrate full conformance to a clause. In these cases, a high confidence rating is assigned. Sufficient evidence is that which allows objective determination by the assessment team that a fishery fully complies with a given clause in the RFM Fishery Standard v2.1

Where a non-conformance (regardless of type) is assigned, the assessment team requests further information/clarification from the Client to confirm the non-conformance. The non-conformance is then re-considered in light of any further evidence provided; this may result in a non-conformance being upgraded, downgraded or closed.

7.1.4 Overall Assessment Scoring

RFM Fishery Standard v2.1 clauses are categorized into four sections:

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

Any more than one (1) major non-conformance or three (3) minor non-conformances assigned to any Section will result in the assignment of a critical non-conformance at section level.

A critical non-conformance for any clause or section stops the assessment, unless/until the Client is able to provide additional information/evidence that demonstrates a higher level of conformity.

7.2 Consultation Meetings

Table 13. Summary of meetings for the 3rd CSI reassessment of AK Salmon Commercial Fisheries , March 5-6,2025.

Meeting Date	Time	Location	Personnel	Areas of discussion
March 5, 2025	8:30AM-9:00 AM	APICDA 717 K Street Anchorage , Alaska	Client AFDF Kristy Clement Hannah Wilson Ann Robertson Global Trust Assessment Team Members Dr. Ivan Mateo, Lead Assessor Mr. Scott Marshall, Assessor Mr. Ray Beamesderfer, Assessor	Initial Client meeting - Purpose of surveillance audit. - Updates on performance of the fishery
	9:00AM-10:30 AM		ADF&G Bill Templin Global Trust Assessment Team Members Dr. Ivan Mateo, Lead Assessor Mr. Scott Marshall, Assessor Mr. Ray Beamesderfer, Assessor	- Updates on research, budgets and future direction. - Significant changes to the status of salmon stocks or fisheries - Significant changes in fishery management or related programs - Significant challenges currently and potentially in the future for sustainable management of salmon stocks
	10:30AM-11:30 AM		ADF&G Forrest Bowers Global Trust Assessment Team Members Dr. Ivan Mateo, Lead Assessor Mr. Scott Marshall, Assessor Mr. Ray Beamesderfer, Assessor	- Updates on research, budgets and future direction. - Significant changes in fishery management or related programs
	11:30 AM-12:30PM		ADF&G Andrew Munro Global Trust Assessment Team Members Dr. Ivan Mateo, Lead Assessor Mr. Scott Marshall, Assessor Mr. Ray Beamesderfer, Assessor	- Updates/changes in stock assessment - Significant changes to the status of salmon stocks or fisheries - Significant changes in fishery management or related programs - Significant challenges currently and potentially in the future for sustainable management of salmon stocks
	2:30 PM-3:30PM		ADF&G	Updates on Pacific Salmon Commission

			Dani Evenson Global Trust Assessment Team Members Dr. Ivan Mateo, Lead Assessor Mr. Scott Marshall, Assessor Mr. Ray Beamesderfer, Assessor	▪ Updates fish stocks and species of relevance to the State of Alaska under the Endangered Species Act and Marine Mammal Protection Act.
March 6, 2025	10:00AM-11:00 AM	APICDA 717 K Street Anchorage, Alaska	Aaron Poetter, ADF&G Central Region Supervisor Global Trust Assessment Team Members Dr. Ivan Mateo, Lead Assessor Mr. Scott Marshall, Assessor Mr. Ray Beamesderfer, Assessor	▪ Updates/changes in: ○ stock assessment ○ research ○ management ▪ significant BOF decisions/actions ▪ budgets, and staffing ▪ significant changes to the status of salmon stocks or fisheries ▪ significant changes in fishery management or related programs ▪ significant challenges currently and potentially in the future for sustainable management of salmon stocks
	11:00AM-12:00 PM		ADF&G Westward Region Kevin L Schaberg Nicholas H. Sagalkin (remote) Global Trust Assessment Team Members Dr. Ivan Mateo, Lead Assessor Mr. Scott Marshall, Assessor Mr. Ray Beamesderfer, Assessor	▪ Updates/changes in: ○ stock assessment ○ research ○ management ▪ significant BOF decisions/actions ▪ budgets, and staffing ▪ significant changes to the status of salmon stocks or fisheries ▪ significant changes in fishery management or related programs ▪ significant challenges currently and potentially in the future for sustainable management of salmon stocks
	1:00PM-2:00 PM		Anne Reynolds Manney, ADF&G SEAK Region Supervisor (remote)	▪ Updates/changes in: ○ stock assessment ○ research ○ management

			▪ significant BOF decisions/actions ▪ budgets, and staffing ▪ significant changes to the status of salmon stocks or fisheries ▪ significant changes in fishery management or related programs ▪ significant challenges currently and potentially in the future for sustainable management of salmon stocks
	2:00 PM-3:00 PM	John Linderman, ADF&G AYK Region Supervisor (remote) Global Trust Assessment Team Members Dr. Ivan Mateo, Lead Assessor Mr. Scott Marshall, Assessor Mr. Ray Beamesderfer, Assessor	▪ Updates/changes in: ○ stock assessment ○ research ○ management ▪ significant BOF decisions/actions ▪ budgets, and staffing ▪ significant changes to the status of salmon stocks or fisheries ▪ significant changes in fishery management or related programs ▪ significant challenges currently and potentially in the future for sustainable management of salmon stocks
	3:00PM-4:00PM	PNP Hatchery Operators Tina Fairbanks, KRAA Katie Harms, DIPAC Dean Day, CIAA Geoff Clark, PWSAC (remote) Global Trust Assessment Team Members Dr. Ivan Mateo, Lead Assessor Mr. Scott Marshall, Assessor Mr. Ray Beamesderfer, Assessor	▪ Updates in PNP programs ○ egg take goals, ○ release strategies, ○ release locations, ○ research undertaken, ▪ Information regarding success of current programs in meeting association goals. ▪ Update on KRAA Progress on Marking and Sampling
	5:30PM-6:00PM	Client AFDF Kristy Clement Hannah Wilson Ann Robertson	Closing Client meeting ▪ Progress on the NCs. ▪ Discussion Surveillance Findings

			Global Trust Assessment Team Members Dr. Ivan Mateo, Lead Assessor Mr. Scott Marshall, Assessor Mr. Ray Beamesderfer, Assessor	
March, 10, 2025	2:00PM- 3:00PM		PNP Hatchery Operators Susan Doherty, SSRAA Taylor Scott, NSRAA Scott Wagner, NSRAA (remote) Global Trust Assessment Team Members Dr. Ivan Mateo, Lead Assessor Mr. Scott Marshall, Assessor Mr. Ray Beamesderfer, Assessor	▪ Updates in PNP programs ○ egg take goals, ○ release strategies, ○ release locations, ○ research undertaken, ▪ Information regarding success of current programs in meeting association goals.

8 Summary of Assessment Outcomes

8.1 Assessment Outcomes by Clause

Table 14 presents Confidence Ratings and Conformance Levels for each applicable Clause resulting from this Assessment. Supporting evidence specific to each Clause in the sections A-D is outlined in section 9 of the RFM 2.1 standard.

Table 14. Confidence ratings and conformance levels for each clause of the RFM Standard 2.1.

Section	Fundamental Clause	Supporting Clause	Applicable?	Numerical score	Confidence Rating	Conformance Level	NC No.
Topics that will trigger immediate assessment failure			Yes	n/a	High	Full	
A	The Fisheries Management System	1	1.1	Yes	10	High	Full
			1.2	Yes	10	High	Full
			1.2.1	Yes	10	High	Full
			1.3	Yes	10	High	Full
			1.3.1	Yes	10	High	Full
			1.4	No			
			1.4.1	Yes	10	High	Full
			1.5	Yes	10	High	Full
			1.6	Yes	10	High	Full
			1.6.1	No			
			1.7	Yes	10	High	Full
			1.8	Yes	10	High	Full
			1.9	No			
		2	2.1	Yes	10	High	Full
			2.1.1	Yes	10	High	Full
			2.1.2	Yes	10	High	Full
			2.2	Yes	10	High	Full
			2.3	Yes	10	High	Full
			2.4	Yes	10	High	Full
			2.5	Yes	10	High	Full
			2.6	Yes	10	High	Full
		3	2.7	Yes	10	High	Full
			3.1	Yes	10	High	Full
			3.1.1	Yes	10	High	Full
			3.1.2	Yes	10	High	Full
			3.1.3	Yes	10	High	Full
			3.2	Yes	10	High	Full
			3.2.1	Yes	10	High	Full
			3.2.2	Yes	10	High	Full
			3.2.3	Yes	10	High	Full
			3.2.4	Yes	10	High	Full
B	Science, Stock Assessment Activities and the Precautionary Approach	4	4.1	Yes	10	High	Full
			4.1.1	Yes	10	High	Full
			4.1.2	Yes	10	High	Full
			4.2	Yes	10	High	Full
			4.2.1	Yes	10	High	Full
			4.3	Yes	10	High	Full
			4.4	Yes	10	High	Full
			4.5	Yes	10	High	Full
			4.6	Yes	10	High	Full

Table 14. Confidence ratings and conformance levels for each clause of the RFM Standard 2.1.

Section	Fundamental Clause	Supporting Clause	Applicable?	Numerical score	Confidence Rating	Conformance Level	NC No.
			4.7	Yes	10	High	Full
			4.8	Yes	10	High	Full
			4.9	No			
			4.10	No			
			4.11	No			
		5	5.1	Yes	10	High	Full
			5.1.1	Yes	10	High	Full
			5.1.2	Yes	10	High	Full
			5.2	Yes	10	High	Full
			5.3	Yes	10	High	Full
			5.4	Yes	10	High	Full
			5.5	Yes	10	High	Full
		6	6.1	Yes	10	High	Full
			6.2	Yes	10	High	Full
			6.3	Yes	10	High	Full
			6.4	Yes	10	High	Full
			6.5	Yes	10	High	Full
		7	7.1	Yes	10	High	Full
			7.1.1	Yes	10	High	Full
			7.1.2	Yes	10	High	Full
			7.2	Yes	10	High	Full
C	Management measures, implementation, monitoring, and control	8	8.1	Yes	10	High	Full
			8.1.1	Yes	10	High	Full
			8.1.2	Yes	10	High	Full
			8.2	Yes	10	High	Full
			8.3	Yes	10	High	Full
			8.4	Yes	10	High	Full
			8.4.1	Yes	10	High	Full
			8.5	Yes	10	High	Full
			8.5.1	Yes	10	High	Full
			8.6	Yes	10	High	Full
			8.7	Yes	10	High	Full
			8.8	Yes	10	High	Full
			8.9	Yes	10	High	Full
			8.10	Yes	10	High	Full
			8.11	Yes	10	High	Full
			8.12	Yes	10	High	Full
			8.13	No			
		9	9.1	Yes	10	High	Full
			9.2	Yes	10	High	Full
			9.3	Yes	10	High	Full
		10	10.1	Yes	10	High	Full
			10.2	Yes	10	High	Full
			10.3	No			
			10.3.1	No			
			10.4	No			
			10.4.1	No			

Table 14. Confidence ratings and conformance levels for each clause of the RFM Standard 2.1.

Section		Fundamental Clause	Supporting Clause	Applicable?	Numerical score	Confidence Rating	Conformance Level	NC No.
D	Serious Impacts of the Fishery on the Ecosystem	11	11.1	Yes	10	High	Full	
			11.2	Yes	10	High	Full	
			11.3	Yes	10	High	Full	
			11.4	Yes	10	High	Full	
		12	12.1	Yes	10	High	Full	
			12.2	Yes	10	High	Full	
			12.2.1	Yes	10	High	Full	
			12.2.2	Yes	10	High	Full	
			12.2.3	Yes	10	High	Full	
			12.2.4	Yes	10	High	Full	
			12.2.5	Yes	10	High	Full	
			12.2.6	Yes	10	High	Full	
			12.2.7	Yes	10	High	Full	
			12.2.8	Yes	10	High	Full	
			12.2.9	Yes	10	High	Full	
			12.2.10	Yes	10	High	Full	
			12.2.11	Yes	10	High	Full	
			12.3	Yes	10	High	Full	
			12.4	Yes	10	High	Full	
			12.5	Yes	10	High	Full	
			12.6	Yes	10	High	Full	
			12.7	Yes	10	High	Full	
		13	13.1	Yes	10	High	Full	
			13.1.1	Yes	10	High	Full	
			13.2	Yes	10	High	Full	
			13.2.1	Yes	10	High	Full	
			13.3	Yes	10	High	Full	
			13.4	Yes	10	High	Full	
			13.5	Yes	10	High	Full	
			13.6	Yes	10	High	Full	
			13.7	Yes	10	High	Full	
			13.7.1	Yes	10	High	Full	
			13.7.2	Yes	10	High	Full	
			13.7.3	Yes	10	High	Full	
			13.8	Yes	10	High	Full	
			13.9	Yes	10	High	Full	
			13.10	Yes	10	High	Full	
			13.11	Yes	10	High	Full	
			13.12	Yes	10	High	Full	
			13.13	Yes	10	High	Full	

8.2 Certification Recommendation

Following this Assessment, the Assessment Team recommends that the applicant fishery.

- **U.S. Alaska Salmon Commercial Fisheries**

be certified against RFM Certification Program Fisheries Standard Version 2.1.

8.3 Certification Determination

Global Trust's internal Fishery Certification Committee, which is comprised of both internal and external fishery experts as well as certification experts, makes the ultimate determination as to whether an applicant fishery is granted certification.

Following a meeting on August 29th 2025, the Certification Committee has determined that the applicant fishery in this instance;

- **U.S. Alaska Salmon Commercial Fisheries**

be certified against RFM Certification Program Fisheries Standard Version 2.1.

9 Assessment Outcomes

9.1 Topics that will trigger immediate assessment failure

According to the RFM Standard Version 2.1, the following fisheries management issues will cause a fishery to immediately fail assessment:

- Dynamiting, poisoning, and other comparable destructive fishing practices.
- Significant illegal, unreported, and unregulated (IUU) fishing activities in the country jurisdiction.
- Shark finning (i.e., removal and retention of shark fins while the remainder of the shark is discarded in the ocean).
- 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 reassessment, carried out a review of the available evidence with respect to these issues. The results of this review are presented below.

Topics that will trigger immediate assessment failure.						
Dynamiting, poisoning, and other comparable destructive fishing practices.						
Confidence that this is <u>NOT</u> occurring:	Low	☐	Medium	☐	High	☒
SUPPORTING EVIDENCE:						
Significant illegal, unreported, and unregulated (IUU) fishing activities in the country jurisdiction.						
Confidence that this is <u>NOT</u> occurring:	Low	☐	Medium	☐	High	☒
SUPPORTING EVIDENCE:						
Shark finning.						
Confidence that this is <u>NOT</u> occurring:	Low	☐	Medium	☐	High	☒
SUPPORTING EVIDENCE:						
Slavery and slave labor on board fishing vessels.						
Confidence that this is <u>NOT</u> occurring:	Low	☐	Medium	☐	High	☒
SUPPORTING EVIDENCE:						
Significant lack of compliance with the requirements of an international fisheries agreement.						
Confidence that this is <u>NOT</u> occurring:	Low	☐	Medium	☐	High	☒
SUPPORTING EVIDENCE:						

9.2 Section A: The Fisheries Management System

9.2.1 Fundamental Clause 1. Structured and legally mandated management system

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.

9.2.1.1 Supporting Clause 1.1.

1.1.	There shall be an effective legal and administrative framework established at international, State and local levels appropriate for fishery resource conservation and management. The management system and the fishery operate in compliance with the requirements of international, State, and local laws and regulations, including the requirements of any regional and/or international fisheries management agreement.		
Relevance:	Relevant		
Evaluation Parameters			
Process: Management agencies are physically and legally established at international, State and local levels.			☒
EVIDENCE:			
Alaska’s salmon fisheries are managed under a clear structure of laws, regulations, treaties, and other legal mandates and instruments, at the international, national, state (State-wide), and local (Within state) levels. This management process is well-established and transparent. US states are responsible for management of fishery resources in freshwater and marine waters within 3 miles of the coast. For the State of Alaska, Section 4 (Sustained Yield) of Article VIII of Alaska’s Constitution states that fish, forests, wildlife, grasslands, and all other renewable resources belonging to the state shall be utilized, developed and maintained on the sustained yield principle, subject to preferences among beneficial uses. ADFG Commercial Fisheries Division is responsible for conservation of Alaska’s salmon stocks and for management of the commercial fisheries. ADFG’s fishery managers in each area produce annual management reports and similar documents, taking into account all previously-agreed management measures. Representatives of ADFG and NMFS routinely and actively participate in several international forums and organizations (i.e. North Pacific Anadromous Fish Commission, and Pacific Salmon Commission). These organizations strive for compatibility in their management and actively foster cooperation among States with regard to salmon fisheries research, development and management. ADFG conducts routine annual and in-season reviews and revisions of conservation and management measures within the Commercial Fisheries division, and with the BOF. The management arrangements and decision-making processes for Alaska salmon fisheries are organized in a very transparent manner, and are readily accessible on the ADFG website. In Alaska, management of salmon fisheries in Federal waters of marine waters, 3-200 miles offshore of the Alaska coastline has also been delegated to the State by the North Pacific Fishery Management Council of the National Marine Fisheries Service. The sole exception is Cook Inlet where the North Pacific Fishery Management Council assumed management of federal waters in 2023 in response to direction by federal district court in resolution of a lawsuit by commercial fishery interests. The Pacific Salmon Treaty between the US and Canada regulates harvest of transboundary salmon stocks in Alaska commercial fisheries which can intercept significant numbers of salmon that originate in Canadian waters of the Yukon River. In 2018, the Pacific Salmon Commission (PSC) has announced the conclusion of negotiations between the United States and Canada on the Pacific Salmon Treaty (Treaty), resulting in a new 10-year harvest agreement.			
Current status: The output of the management organization(s) is in line with fishery resource management needs. Examples may include rule making, scientific research, stock and ecosystem assessments, implementation of rules and regulations, and enforcement activities.			☒
EVIDENCE:			
Almost all of Alaska’s salmon fisheries take place in the internal waters (0-3 nm, and other enclosed waters) of the State of Alaska. Alaska manages those fisheries under the authority of its Constitution, statutes (laws), and regulations (administrative code):			

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

* Article VIII of Alaska's Constitution states: Section 4. Sustained Yield: Fish, forests, wildlife, grasslands, and all other renewable resources belonging to the State shall be utilized, developed, and maintained on the sustained yield principle, subject to preferences among beneficial uses. ³³

* "Alaska's Constitution: A Citizen's Guide (Fourth Edition)" explains: "This section bolsters the commitment to conservation found in Section 2. The principle of sustained yield management is a basic tenet of conservation: the annual harvest of a biological resource should not exceed the annual regeneration of that resource. Maximum sustained yield is the largest harvest that can be maintained year after year. State law defines maximum sustained yield as 'the achievement and maintenance in perpetuity of a high level annual or regular periodic output of the various renewable resources of the state land consistent with multiple uses' (AS 38.04.910). At the time of the constitutional convention, stocks of Alaska's salmon had been reduced to a sad remnant of their past bounty by neglect of the sustained yield maxim. The qualifying phrase 'subject to preferences among beneficial uses' signals recognition by the delegates that not all the demands made upon resources can be satisfied, and that prudent resource management based on modern conservation principles necessarily involves prioritizing competing uses."

* Statutes (also termed "laws") are enacted by the state Legislature. Title 16 of Alaska Statutes, entitled "Fish And Game", sets forth the laws which govern the management of Alaska's salmon fisheries, as well as myriad other living resources. Like all other statutes, Title 16 is consistent with the Constitution. ³⁴

* Regulations (also termed "administrative code") are developed and implemented by departments of the Executive branch of government, which is headed by the Governor. Title 5 of the Alaska Administrative Code, entitled "Fish And Game", is the body of state regulations by which Alaska's salmon fisheries are managed. All regulations must be consistent with the governing statutes; that is, 5AAC is consistent with AS16. Regulations of particular relevance to this assessment are: Commercial and Subsistence Fishing and Private Non-profit Salmon Hatcheries. (5 AAC 1 - 5 AAC 41) and Fish and Game Advisory Committees. (5 AAC 96 - 5 AAC 98. ADFG Commercial Fisheries Division is responsible for conservation of Alaska's salmon stocks and for management of the commercial fisheries. ³⁵ In addition, the Sport Fish, Subsistence and Habitat divisions, as well as the BOF, all have responsibility for salmon conservation. The BOF is responsible for fishery policy and allocation among users. ³⁶

The Magnuson-Stevens Act is the primary federal legislation governing the management of the nation's marine fisheries. The Magnuson-Stevens Act gives the Council responsibility for preparing and amending fishery management plans for any fishery in the EEZ off Alaska that requires conservation and management (16 U.S.C. 1852 (h)). The Magnuson-Stevens Act requires fishery management plans to be consistent with a number of provisions, including ten national standards, with which all fishery management plans must conform and which serve to guide fishery management. Besides the Magnuson-Stevens Act, U.S. fisheries management must be consistent with the requirements of other laws, such as the Marine Mammal Protection Act and the Endangered Species Act. Salmon management in U. S. federal waters outside 3 miles from shore is delegated to the state of Alaska with the exception of Cook Inlet. ³⁷

Appropriateness/Effectiveness:

The management framework is appropriate for managing the resource. For example, the larger the exploitation, vulnerability, or risks of a fish stock, the more work and precision (assessment of the resource ensuring the risks related to overfishing and equivalent negative effects) shall be focused in managing the resource. This shall be done in compliance with legislative and regulatory requirements at the local, national, and international level, including the requirements of any regional fisheries management agreement. The management system shall not be subject to continual unresolved or repeated disputes or political instability.



EVIDENCE:

³³ http://w3.legis.state.ak.us/docs/pdf/citizens_guide.pdf

³⁴ <http://www.energy.gov/sites/prod/files/2015/06/f22/16.20.195.pdf>

³⁵ <http://www.adfg.alaska.gov/index.cfm?adfg=fishingCommercial.sustainingakfisheries>

³⁶ <http://www.adfg.alaska.gov/index.cfm?adfg=process.main>

³⁷ <https://www.npfmc.org/wp-content/PDFdocuments/fmp/Salmon/SalmonFMP.pdf>

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

An intensive fishery management framework has been implemented in order to produce maximum or optimum levels of salmon harvest consistent with long-term sustainability. This framework includes abundance-based management, stock-specific spawning escapement goals based on long-term resource assessments, emphasis of terminal fisheries which provide for stock-specific management, inseason management which allows fishery adjustments based on normal system variability, a regional management structure which provides a high degree of responsiveness to local conditions and a highly-developed regulatory and enforcement management system to facilitate effective fishery implementation consistent with legislative and regulatory requirements at the local, national, and international level.

Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that an effective legal and administrative framework established at the local and national level is appropriate for fishery resource conservation and management. In addition, the management system and the fishery operate in compliance with the requirements of local, national, and international laws and regulations, including the requirements of any regional fisheries management agreement. Examples may include fishery management plans or other relevant information.</i>	☒

EVIDENCE:
The availability and quality of evidence is sufficient to substantiate an effective legal and administrative framework is appropriate for fishery resource conservation and management.

References:	See citations in evidence				
Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	x 3
	10			0	
			)		=
					Overall score
					10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)					High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)					Full Conformance
Non-conformance Number (if applicable):					--

9.2.1.2 Supporting Clause 1.2.

1.2.	Management measures shall consider (1) stock status (i.e., overfished, biomass) and genetic diversity (stock structure) over its entire area of distribution, and (2) other biological characteristics of the fish stock (stock) including age of maturity and reproductive potential.

Relevance:	Relevant

Evaluation Parameters	Met?
Current status/Appropriateness: <i>If a stock is subject to two or more jurisdictions (nations, states, etc.) (either by distribution or migration), then exploitation by all jurisdictions shall be considered when defining exploitation levels and determining stock status to avoid overfishing/depletion of the resource. The scoring of this parameter shall consider that significant migration may take a species outside the jurisdiction of the managing agency (e.g., for significant feeding or ontogenetic migration).</i>	☒

EVIDENCE:
Management measures take into account the whole Alaska salmon stock unit over its entire area of distribution including some stocks in the extreme south being managed concurrently with Canada. ADFG's main priority for salmon fisheries is achieving escapement, which ensures that enough salmon escape the fisheries and spawn in their natal rivers. Escapement goals necessarily take into account each stock unit over its entire area of distribution, because escapement is the net result of all factors that have influenced each stock during its life history stages in freshwater and the ocean and along its migration path, including the fisheries

1.2.	Management measures shall consider (1) stock status (i.e., overfished, biomass) and genetic diversity (stock structure) over its entire area of distribution, and (2) other biological characteristics of the fish stock (stock) including age of maturity and reproductive potential.

to which it is subjected. The biological unity of each stock (e.g. Kenai River Chinook salmon, Naknek River sockeye salmon) is explicitly taken into account in ADFG's setting of escapement goals, and in the management of the fisheries, which ensures escapement as its first priority.

Unlike most other commercially harvested fishes, Alaska salmon are anadromous and semelparous. Alaska fisheries for these species do not usually occur out on the open sea; they generally take place relatively near each stock natal stream (with exceptions such as the Southeast Alaska troll and the southern southeast Alaska gillnet fisheries), as adult salmon conduct their spawning migration. Salmon are faithful to their stream, and their stock can be referred to their natal river. This means that common fisheries management methods, such as setting of Total Allowable Catches (TAC), are usually not appropriate for Alaska salmon. ADFG's main priority in managing salmon fisheries is to obtain escapements that ensure enough salmon escape the fisheries, and spawn in their natal rivers to sustain future runs. The total number of salmon returning to a given river (the "run" or "return") is usually much greater than the required escapement level.³⁸ The amount, over and above escapement is available for harvest by commercial, recreational, personal use, or subsistence fisheries. If the run is less than the escapement goal, ADFG attempts to stop or minimize harvests. Therefore, escapement goals take into account each stock unit over its entire area of distribution, because escapement is the net result of all factors which have influenced each stock during its life history, including the fisheries to which it is subjected.

The few Alaska fisheries which harvest mixed and non-local stocks are managed with consideration for exploitation in all jurisdictions and comprehensive stock status assessments. For instance, the SE Alaska Chinook troll fishery which harvests non-Alaska stocks originating from B.C., Washington and Oregon is managed according to catch limits defined under the auspices of the US-Canada Pacific Salmon Commission and assessments by a joint technical committee. Other Alaska fisheries harvesting transboundary stocks are subject to similar manage requirements and assessments.

All five species of Alaska salmon are anadromous and home to their natal streams. Their migration begins in Alaska's freshwater habitats, which the fish depart on their way to marine habitats. These habitats are monitored, studied, and protected by ADFG. In some cases, monitoring and studies are performed by scientists of other agencies, such as the USFS, NPS, and NMFS. Results from monitoring and studies are made available to the public through the ADFG's websites.

The protection of salmon habitat is the responsibility of ADFG's Habitat Division, pursuant to Title 16 of Alaska Statutes. The Habitat Division routinely coordinates its work with other agencies, such as NMFS.³⁹

Because Alaska salmon are anadromous, they cannot properly be considered to be one stock, as would be the case for many other species. Every salmon species and each run have particular characteristics such as size, freshwater habitat requirements, food preferences, ocean migration patterns, spawning run timing, etc. All of these characteristics are considered by ADFG in setting escapement goals and managing the fisheries to achieve these escapement goals as a first priority.

Effectiveness: <i>Managers shall have an understanding of stock structure and composition as these relate to stock resilience over its entire distribution area. The underlying objective is to preserve genetic diversity between and within species and avoid localized depletions (overall affecting the stock contributing to its resilience and stability). This assessment shall consider, when appropriate, demographic independence of populations or stocks (i.e., if a component stock of a species is demographically independent from another because it is genetically different, has significant difference in age structure, or if there is insignificant exchange among groups due to distance, environmental barriers, or other reasons).</i>	☒

EVIDENCE: See previous discussion under current status.	

Effectiveness:	☒

³⁸ <http://www.touchngo.com/lglcntr/akstats/aac/title05/chapter039/section223.htm>

³⁹ <http://www.adfg.alaska.gov/index.cfm?adfg=habitatregulations.main>

1.2.	Management measures shall consider (1) stock status (i.e., overfished, biomass) and genetic diversity (stock structure) over its entire area of distribution, and (2) other biological characteristics of the fish stock (stock) including age of maturity and reproductive potential.		
<i>The stock may spend a portion of its life (migration for feeding, growth, or reproduction) in both fresh and saltwater, in international waters, or in another jurisdiction, and may suffer mortality or other pressures. These must be accounted for when assessing stock status.</i>			
EVIDENCE:			
See previous discussion under current status.			
Evidence Basis:			☒
<i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that management measures consider (1) the stock status over its entire area of distribution, (2) the area through which the stock migrates during its life cycle, and (3) other biological characteristics of the stock. Examples may include the presence of genetic studies, age structure data, stock assessments or other relevant information.</i>			
EVIDENCE:			
The availability and adequacy of evidence is sufficient to substantiate that management measures consider stock status, salmon migration during its life cycle and other biological characteristics of the stock.			
References:	See citations in evidence		
Numerical score:	Starting score	Number of EPs NOT met	Overall score
	10	0 x 3	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Full Conformance
Non-conformance Number (if applicable):			

9.2.1.3 Supporting Clause 1.2.1.

1.2.1.	Previously agreed management measures established and applied in the same region is region shall be taken into account by management.		
Relevance:	Relevant		
Evaluation Parameters			
Process:			☒
<i>There is a process or system that allows the continuity and updating of previously agreed and implemented management measures. Examples may include a specific review process or management plan where these measures can be clearly identified and continued implementation and updating can be carried out.</i>			
EVIDENCE:			
ADFG's fishery managers in each area produce annual management reports that explain how the fisheries were prosecuted and managed in a given year. In addition, regulations concerning allocation criteria and subsistence determinations take into consideration past use and management. In this way, the management system deliberately takes into account all previously-agreed management measures.			
Current status/Appropriateness/Effectiveness:			☒
<i>Previously agreed management measures established and applied in the same region are included and part of current management decisions. Examples may include international or other agreements not honored by the management system or a management agency. The management system is effectively continuing implementation of agreed management measures.</i>			

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

EVIDENCE:

ADFG's fishery managers in each area produce annual management reports and other fisheries related documents. These reports explain how the fisheries were prosecuted and managed in a given year, how that differed from the previous year(s), and results of any changes implemented by ADFG or imposed by the BOF. In addition, regulations concerning allocation criteria and subsistence determinations also take into consideration past use and management. In this way, the management system deliberately takes into account all previously-agreed management measures.

Annual management reports and other fisheries related documents are readily available at the ADFG Commercial Fisheries websites for each major fishing area:

- * Southeast Alaska ⁴⁰
- * Prince William Sound ⁴¹
- * Cook Inlet ⁴²
- * Kodiak & Westward ⁴³
- * Bristol Bay⁴⁴
- * Arctic-Yukon-Kuskokwim ⁴⁵

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that previously agreed management measures established and applied in the same region are taken into account by management.



EVIDENCE:

The availability and adequacy of the evidence is sufficient to substantiate that previously management measures are taken into account by management.

References: See citations in evidence

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)									High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)									Full Conformance
Non-conformance Number (if applicable):									

9.2.1.4 Supporting Clause 1.3.

1.3. Where transboundary, shared, straddling, highly migratory, or high seas stocks are exploited by two or more States (neighboring or not), the applicant and appropriate management organizations concerned shall cooperate and take part in the formal fishery commission or arrangements appointed to ensure effective conservation and management of the stock(s) in question and their environment.

Relevance: Relevant

Note: This clause pertains only if the stock is transboundary, shared, straddling, highly migratory, or high seas. Otherwise, this clause is not applicable. This clause is justified by the evidence provided in clause 1.2. Where

⁴⁰ <http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareasoutheast.salmon#fishery>

⁴¹ <http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareapws.salmon>

⁴² <http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareacookinlet.salmon>

⁴³ <http://www.adfg.alaska.gov/index.cfm?adfg=CommercialByAreaKodiak.salmon>, <http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareachignik.salmon>,

<http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareaakpeninsula.main>

⁴⁴ <http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.salmon>

⁴⁵ <http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareanortonound.salmon>,
<http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareakuskokwim.salmon>

1.3.	Where transboundary, shared, straddling, highly migratory, or high seas stocks are exploited by two or more States (neighboring or not), the applicant and appropriate management organizations concerned shall cooperate and take part in the formal fishery commission or arrangements appointed to ensure effective conservation and management of the stock(s) in question and their environment.		
	sub-stocks are referred to as part of an overall stock, there shall be sufficient information on biology, distribution, and life cycle that demonstrates the degree of association or disassociation, and the basis for the management approach taken, to prevent recruitment failure of the stock or other negative impacts that are likely to be irreversible or very slowly reversible.		
Evaluation Parameters			Met?
Process: <i>There is a mechanism in place by which the applicant organization(s) cooperates for the management of the transboundary, shared, straddling, highly migratory or high seas stock. This mechanism has the sustainable total exploitation of the stock as its main objective.</i>			☒
EVIDENCE: Representatives of ADFG and NMFS routinely and actively participate in several relevant Salmon management forums and organizations that deal with transboundary issues.			
Current Status/Appropriateness/Effectiveness: <i>There is evidence that the mechanism described in the process parameter is effective at ensuring the stock is sustainably exploited. This can take the form of evidence that the stock is not overfished or subject to overfishing across the entirety of the range of the stock.</i>			☒
EVIDENCE: Representatives of ADFG and NMFS routinely and actively participate in several relevant forums and organizations that deal with transboundary issues, including, but not limited to: * North Pacific Anadromous Fish Commission (NPAFC) ⁴⁶ * Pacific Salmon Commission (PSC) ⁴⁷ * Pacific States Marine Fisheries Commission (PSMFC) ⁴⁸ * Pacific Fisheries Management Council (PFMC) ⁴⁹			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that where transboundary, shared, straddling, highly migratory, or high seas fish stocks are exploited by two or more States, the applicant and appropriate management organizations concerned cooperate and take part in formal fishery discussions or arrangements that have been appointed to ensure effective conservation and management of the stock(s) and fisheries in question. Examples may include evidence of formal agreements, records of meetings, and decisions.</i>			☒
EVIDENCE: The availability and adequacy of evidence is sufficient to substantiate that supporting clause 1.3 is met by management agencies where transboundary, shared, straddling fish stocks are exploited by two or more states (PSC-JTC 2019, PSC-TCTR 2019).			
References:	See citations in evidence		
Numerical score:	Starting score 10	– (Number of EPs NOT met 0 x 3)	= Overall score 10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Full Conformance
Non-conformance Number (if applicable):			--

⁴⁶ <http://www.npafc.org/new/index.html>
⁴⁷ <http://www.psc.org/>
⁴⁸ <http://www.psmfc.org/>
⁴⁹ <http://www.pfmc.org>

9.2.1.5 Supporting Clause 1.3.1.

1.3.1.	Conservation and management measures established for the stock under consideration within the jurisdiction of the relevant States for transboundary, shared, straddling, highly migratory, or high seas stocks, shall be compatible in a manner consistent with the rights, competence, and interests of the States concerned.	
Relevance:	Relevant Note. This clause pertains only if stock is transboundary, shared, straddling, highly migratory, or high seas. Otherwise, this clause is not applicable. This clause is justified by the evidence provided in clause 1.2. Compatibility of management measures does not mean identical management measures, but the approach shall be consistent with respect to the overall management and conservation goals of the stock.	
Evaluation Parameters		Met?
Process: <i>Identification of common objectives for maintenance of stock biomass.</i>		☒
EVIDENCE: As with all migratory and straddling fishery species, there is debate and often dispute concerning management of these stocks in national and international waters. Fundamental agreements on management and arrangements for furthering research exist for Pacific salmon throughout the range of the five species. These include: a prohibition of high seas fishing for salmon by all nations involved (Japan, Canada, Republic of Korea, Russian Federation and the United States (NPAFC) and supporting this, research policies that further understanding on marine range and distribution of each major strain of Pacific salmon.		
Current status/Appropriateness/Effectiveness: <i>Implementation of measures to achieve the common objectives mentioned above (i.e., similar harvest rates based on stock status, common rebuilding objectives for depleted stocks).</i>		☒
EVIDENCE: Each of the above-cited organizations in which ADFG and NMFS salmon scientists and managers participate strives for compatibility in their management measures. These organizations have sustained yield and conservation as their highest priority, even in cases where different states are competing for the same resource (i.e., US and Canada).⁵⁰ As with all migratory and straddling fishery species there is debate and often dispute concerning management of these stocks in national and international waters. Fundamental agreements on management, and arrangements for furthering research, exist for Pacific salmon throughout the range of the five species. These include: a prohibition of high seas fishing for salmon by all nations involved (Japan, Canada, Republic of Korea, Russian Federation and the United States (NPAFC) and, supporting this, research policies that further understanding on marine range and distribution of each major strain of Pacific salmon.⁵¹ Within the international arena of salmon management in the North Pacific, incompatibilities in approach can exist. However, the internationally mandated organizations have made commitments to common objectives and develop resolutions for improving compatibility within the management arrangements of the contracting parties. Within the US and Alaska, there is a strong track record of implementing agreements and resolutions made at these organizations as Federal or State laws.⁵² U.S.- Canada Pacific Salmon Commission.⁵³ It's the one body that Alaska shares straddling stocks with, and really does have almost daily coordination on management resources. Measures have also been implemented to limit incidental harvest of salmon, including Chinook and Chum salmon, in some groundfish trawl fisheries in federal waters off of Alaska. Salmon bycatch in these fisheries is reported annually⁵⁴ and regulated through fisheries management plan amendments. In 2010, NOAA Fisheries initiated a program to reduce Chinook salmon bycatch in trawl fisheries operating in the Bering Sea and Aleutian Islands. This program has continued to develop through time with the goal to limit incidental take of Chinook salmon, while maintaining economically important groundfish trawl fisheries.⁵⁵		
Evidence Basis:		☒

⁵⁰ <http://www.npafc.org/new/index.html>

⁵¹ <http://www.npafc.org/>

⁵² <http://www.psmfc.org/>

⁵³ <http://www.psc.org/>

⁵⁴ <https://www.fisheries.noaa.gov/alaska/commercial-fishing/fisheries-catch-and-landings-reports#bsai/goa-groundfish-combined>

⁵⁵ <https://www.fisheries.noaa.gov/alaska/bycatch/chinook-salmon-bycatch-management-alaska>

1.3.1.	Conservation and management measures established for the stock under consideration within the jurisdiction of the relevant States for transboundary, shared, straddling, highly migratory, or high seas stocks, shall be compatible in a manner consistent with the rights, competence, and interests of the States concerned.						
<i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that conservation and management measures established for the stock within the jurisdiction of the relevant States for shared, straddling, high seas, or highly migratory stocks, are compatible in a manner consistent with the rights, competences, and interests of the States concerned. Examples may include evidence of formal agreements, records of meetings and decisions, stock assessment, and other reports.</i>							
EVIDENCE:							
The availability and adequacy of evidence is sufficient to substantiate that the supporting clause is met by management agencies where transboundary, shared, straddling fish stocks are compatible in a manner consistent with the interests of the states concerned (PSC-JTC 2019, PSC-TCTR 2019).							
References:	See citations in evidence						
Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x 3	) =	Overall score
	10			0			10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)							High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)							Full Conformance
Non-conformance Number (if applicable):							--

9.2.1.6 Supporting Clause 1.4.

1.4.	A State's fishery management organization not member or participant of a sub-regional or regional fisheries management organization shall cooperate, in accordance with relevant international agreements and law, in the conservation and management of the relevant fisheries resources by giving effect to any relevant measures adopted by such organization or arrangement.		
Relevance:	Not relevant. Supporting Clause 1.4 is not relevant because the nations that fish North Pacific Salmon AK fishery, namely the U.S. and Canada, are members of the NPAFC, and PSC.		
Evaluation Parameters			Met?
Process: <i>There is ongoing cooperation in stock assessment, data sharing, and other activities.</i>			☐
EVIDENCE:			
Current status/Appropriateness/Effectiveness: <i>Relevant measures are implemented by non-member States.</i>			☐
EVIDENCE:			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the State non-member or participant of a sub-regional or regional fisheries management organization cooperates, in accordance with relevant international agreements and law, in the conservation and management of the relevant fisheries resources by giving effect to any relevant measures adopted by such organization or arrangement. Examples may include reports detailing results of common surveys or acceptable harvest rates.</i>			☐
EVIDENCE:			

1.4.	A State's fishery management organization not member or participant of a sub-regional or regional fisheries management organization shall cooperate, in accordance with relevant international agreements and law, in the conservation and management of the relevant fisheries resources by giving effect to any relevant measures adopted by such organization or arrangement.			
References:				
Numerical score:	Starting score	–	(Number of EPs <u>NOT</u> met x 3)	= Overall score
	10	–	() x 3	= NA
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)				--
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)				--
Non-conformance Number (if applicable):				--

9.2.1.7 Supporting Clause 1.4.1

1.4.1.	A fishery management organization seeking to take any action through a non-fishery organization which may affect the conservation and management measures taken by a competent sub-regional or regional fisheries management organization or arrangement shall consult with the latter, in advance to the extent practicable, and take its views into account.			
Relevance:	Relevant Note: This clause pertains only if stock is transboundary, shared, straddling, highly migratory, or high seas. Otherwise, this clause is not applicable. This clause is justified by the evidence provided in clause 1.2.			
Evaluation Parameters				Met?
Process: <i>There is a history of prior consultation.</i>				☒
EVIDENCE: ADFG and NOAA are mandated to protect estuarine and marine habitats from non-fishery actions primarily through cooperative efforts involving other state and federal agencies and local governments. In all circumstances, full account is taken of any proposed non fishery actions and activities that may have an impact of the conservation and management of Alaska salmon fishery resources. In addition, the Alaska Department of Natural Resources (ADNR) is authorized to create an instream flow reservation for fish and wildlife. ADFG has a program to gather information and nominate instream flow reservations for ADNR to adjudicate.				
Current status/Appropriateness/Effectiveness: <i>The views of the managing fishery organization are taken into account.</i>				☒
EVIDENCE: ADFG protects estuarine and marine habitats primarily through cooperative efforts involving other state and federal agencies and local governments. Both ADFG and NOAA participate in a network of coastal area management related institutional frameworks that serve to review any proposed development or activity that could impact the conservation and habitat of Alaska salmon. The main processes are the National Environmental Policy Act (NEPA) and Essential Fish Habitat (EFH) which allow ADFG and NOAA to implement their statutory obligations for the protection and conservation of Alaska's fish and game resources within their respective jurisdictions. For example, any activity or project that is conducted below the ordinary high-water mark of an anadromous stream requires a Fish Habitat Permit.⁵⁶ NOAA Fisheries' Habitat Conservation Division works in coordination with other government agencies and industries, stakeholder groups, private citizens to avoid, minimize, or offset the adverse effects of activities on EFH and living marine resources in Alaska. This work includes conducting and/or reviewing environmental analyses for a large variety of activities outside of fishing ranging from coastal development to large transportation and energy projects. The division identifies technically and economically feasible				

⁵⁶ <http://www.adfg.alaska.gov/index.cfm?adfg=habitatregulations.main>

1.4.1.	A fishery management organization seeking to take any action through a non-fishery organization which may affect the conservation and management measures taken by a competent sub-regional or regional fisheries management organization or arrangement shall consult with the latter, in advance to the extent practicable, and take its views into account.				
alternatives and offers recommendations for the conservation of valuable living marine resources. The division focuses on activities in habitats used by federally managed fish species located offshore, nearshore, in estuaries, and in freshwater areas important to anadromous salmon. ⁵⁷ Hence, in all circumstances, full account is taken of proposed actions and activities that may have an impact of the conservation and management of Alaska salmon fishery resources.					
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that a fishery management organization seeking to take any action through a non-fishery organization which may affect the conservation and management measures taken by a competent sub-regional or regional fisheries management organization or arrangement consults with the latter, in advance to the extent practicable, and take its views into account. Examples may include reports detailing action taken by the State(s) in question.</i>					☒
EVIDENCE: The availability and quality of evidence are sufficient to substantiate ADFG and NOAA are seeking to affect conservation and management through cooperative and collaborative actions with non-fishery organizations.					
References:		See citations in evidence			
Numerical score:	Starting score		Number of EPs <u>NOT</u> met		Overall score
	10	– (	0	x 3) =	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)					High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)					Full Conformance
Non-conformance Number (if applicable):					--

9.2.1.8 Supporting Clause 1.5.

1.5.	The applicant's fishery management system, when appropriate for the stock under consideration, shall actively foster cooperation between States with regard to (1) information gathering and exchange, (2) fisheries research, (3) fisheries management, and (4) fisheries development.		
Relevance:	Relevant Note: This clause pertains only if stock is transboundary, shared, straddling, highly migratory, or high seas. Otherwise, this clause is not applicable. This clause is justified by the evidence provided in clause 1.2.		
Evaluation Parameters			Met?
Process: <i>The extent to which a formal process or system is available.</i>			☒
EVIDENCE: Representatives of ADFG and NMFS routinely and actively participate in several relevant forums and organizations, including, but not limited to NPAFC, PSC, and PSMFC. These organizations actively foster cooperation among States with regard to salmon fisheries information gathering and exchange, research and management. ADFG and various federal agencies participate in numerous organizations that seek to obtain information about the ecosystem and status and management of salmon fisheries. All salmon fisheries are fully developed and utilized.			
Current Status/Appropriateness/Effectiveness: <i>Level of activity, application, and level of engagement.</i>			☒

⁵⁷ <https://alaskafisheries.noaa.gov/habitat>

1.5. The applicant's fishery management system, when appropriate for the stock under consideration, shall actively foster cooperation between States with regard to (1) information gathering and exchange, (2) fisheries research, (3) fisheries management, and (4) fisheries development.

EVIDENCE:

Representatives of ADFG and NMFS routinely and actively participate in several relevant forums and organizations, including, but not limited to:

* North Pacific Anadromous Fish Commission ⁵⁸ Article VII of the Convention mandates extensive cooperation among member nations in conducting scientific research for the purpose of conservation of anadromous populations. With respect to the Convention area, cooperation includes "collecting, reporting and exchanging statistics and biological information, fisheries data, including catch and fishing effort statistics, biological samples and other relevant data." Pertaining to areas adjacent to the Convention area, the member-nations can be requested to provide "catch information, enhancement information, materials such as biological samples, for example, scales and DNA material, and other technical data or information related to anadromous populations and ecologically related species." The Convention calls for the development of "appropriate cooperation programs, including scientific observer programs, to collect fishing information in the Convention Area for the purpose of scientific research on anadromous populations." Member-nations are also to cooperate in scientific exchanges such as seminars, workshops, and exchanges of scientific personnel.

* Pacific Salmon Commission ⁵⁹ This organization supports fisheries conservation, development, management, and legislation. To accomplish this, it maintains several programs that focus on scientific, inventory and economic research and data collections, consolidation and distribution. These programs primarily provide information for those with scientific or economic interests in the field, but also aim to provide educational materials for the general public related to their areas of focus.

* Pacific States Marine Fisheries Commission ⁶⁰ The Pacific States Marine Fisheries Commission (PSMFC) also coordinates research activities, monitors fishing activities, and collects and maintains databases on salmon, steelhead and other marine fish occurring off the coast of California, Oregon, Washington, Idaho, and Alaska.

The above organizations actively foster cooperation among States with regard to salmon fisheries research and management. ADFG and various federal agencies participate in numerous organizations that seek to obtain information about the ecosystem and status and management of salmon fisheries. Examples include: the North Pacific Research Board (NPRB) which funds "... research activities on or relating to the fisheries or marine ecosystems in the north Pacific Ocean, Bering Sea, and Arctic Ocean (including any lesser related bodies of water) with a priority on cooperative research efforts designed to address pressing fishery management or marine ecosystem information needs; ⁶¹ The Wild Salmon Centre, ⁶² which works to protect the best remaining wild salmon ecosystems across the Pacific Rim; The Pacific Coastal Salmon Recovery Fund, which was established by Congress in 2000 to provide project funding to states and tribes of the Pacific Coast Region to protect, restore, and conserve Pacific salmon and steelhead populations and their habitats; ⁶³ and the Saltonstall-Kennedy grant program, ⁶⁴ which is a fund administered by the NMFS to provide grants or cooperative agreements for fisheries research and development.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the applicant's fishery management system, when appropriate for the stock under consideration, fosters active international cooperation on fishery matters with regard to information gathering and exchange, fisheries research, fisheries management, and fisheries development. Example of evidence sources may include outputs from activity (e.g., reports, minutes, common or collective themes).



EVIDENCE:

⁵⁸ <http://www.npafc.org/new/science.html>

⁵⁹ http://www.psc.org/Meetings/2016_PSC_Annual_Meeting_Summary.pdf

⁶⁰ <http://www.psmfc.org/>

⁶¹ <http://www.nprb.org/nprb/about-us/mission-research-principles/research-approaches/multidisciplinary-integratedecosystem-based-research/>

⁶² <http://wildsalmoncenter.org/>

⁶³ http://www.westcoast.fisheries.noaa.gov/protected_species/salmon_steelhead/recovery_planning_and_implementation/pacific_coastal_salmon_recovery_fund.html

⁶⁴ http://www.nmfs.noaa.gov/mb/financial_services/docs/noaa-fisheries-sk-grants-fy1516-alaska.pdf

1.5. The applicant's fishery management system, when appropriate for the stock under consideration, shall actively foster cooperation between States with regard to (1) information gathering and exchange, (2) fisheries research, (3) fisheries management, and (4) fisheries development.

The availability and quality of the evidence is sufficient to substantiate that ADFG fishery management system fosters cooperation on fishery matters regarding information gathering and exchange on fisheries management and development.

References: See citations in evidence

Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10

Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)

High

Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)

Full Conformance

Non-conformance Number (if applicable):

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9.2.1.9 Supporting Clause 1.6.

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

Relevance: Relevant

Evaluation Parameters

Met?

Process:

There is an agreed-upon system to finance the fishery management organizations and arrangements.



EVIDENCE:

Management bodies such as North Pacific Anadromous Fishery Commission (NPAFC), PFMC, PSC, and PSMFC and their activities involved in the salmon fisheries are largely financed through contributions and dues from members.

Current status/Appropriateness/Effectiveness:

The fishery management organizations and arrangements are currently financed using a cost recovery or other system.



EVIDENCE:

NPAFC was established under the Convention for the Conservation of Anadromous Populations in the North Pacific Ocean (signed in 1992; entered into force in 1993). The member nations of the NPAFC are Canada, Japan, Republic of Korea, Russian Federation, and United States of America. The primary objective of the Commission is to promote the conservation of anadromous populations in the Convention Area. NPAFC operations are supported through contributions made by the Parties.⁶⁵ The PSC is the body formed by the governments of Canada and the United States to implement the Pacific Salmon Treaty staff and other operational costs are financed with annual dues paid by each national government (currently \$1.44 million per country). The Secretariat is not able to act without consensus between countries.⁶⁶ PSMFC's activities are funded through federal grants, special contracts, and dues from its member states. Since 1978, PSMFC has maintained a low overhead rate. PSMFC regularly serves as a primary contractor on grants, projects, and contracts for states and other organizations in large part due to its low overhead and proven management ability. The PSMFC provides administrative support in the form of payroll, procurement, accounting, travel arrangements, and contract monitoring.⁶⁷

⁶⁵ <http://www.npafc.org/new/publications/HandBook/Handbook%203rd%20E%20English.pdf>

⁶⁶ <http://www.psc.org/pubs/About/OrientationGeneralJune2015.pdf>

⁶⁷ <http://www.psmfc.org/psmfc-info>

1.6.	A fishery management organization and sub-regional or regional fisheries management organizations and arrangements, as appropriate, shall agree on the means by which the activities of such organizations and arrangements will be financed, bearing in mind, inter alia, the relative benefits derived from the fishery and the differing capacities of States to provide financial and other contributions. Where appropriate, and when possible, such organizations and arrangements shall aim to recover the costs of fisheries conservation, management, and research.		
Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there is agreement on the means by which the activities of such organizations and arrangements are financed. Where appropriate, and when possible, such organizations and arrangements aim to recover the costs of fisheries conservation, management, and research. Examples may include data showing the expenditure and cost recovery derived from fisheries management.			☒
EVIDENCE: The availability and adequacy of evidence is sufficient to substantiate that there is agreement on means to finance costs of fisheries management.			
References:	See citations in evidence		
Numerical score:	Starting score 10	- (0 x 3) =	Overall score 10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Full Conformance
Non-conformance Number (if applicable):			

9.2.1.10 Supporting Clause 1.6.1.

1.6.1.	Without prejudice to relevant international agreements, States or fishery management organizations shall encourage banks and financial institutions not to require, as a condition of a loan or mortgage, fishing vessels or fishing support vessels to be flagged in a jurisdiction other than that of the State of beneficial ownership where such a requirement would have the effect of increasing the likelihood of non-compliance with international conservation and management measures.		
Relevance:	Not relevant. Supporting clause 1.61 is not relevant as there are no flagged vessels fishing in the US Alaska salmon fishery.		
Evaluation Parameters			Met?
Process: There is a system that encourages banks to require vessels to be flagged within the jurisdiction of interest.			☐
EVIDENCE:			
Current Status/Appropriateness/Effectiveness: There is regulation that directs for vessels to be flagged outside the State's jurisdiction. The fishery for the stock under consideration occurs outside EEZ, and there are flags of convenience operations present, or evidence of IUU fishing.			☐
EVIDENCE:			
Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the State or fishery management organizations encourages banks and financial institutions not to require, as a condition of a loan or mortgage, fishing vessels or fishing support vessels to be flagged in a jurisdiction other than that of the State of beneficial ownership where such a requirement would have the effect of increasing the likelihood of non-compliance with international conservation and management measures. Examples may include data showing fishery operation by vessels flying a flag different from that of the State where fishing geographically occurs.			☐

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

EVIDENCE:

References:											
Numerical score:	Starting score		Number of EPs <u>NOT</u> met					x 3		=	Overall score
	10									=	NA
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)											--
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)											--
Non-conformance Number (if applicable):											--

9.2.1.11 Supporting Clause 1.7.

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

Relevance:	Relevant

Evaluation Parameters	Met?
Process: <i>There is a procedure to review management measures. The procedure includes the use of outcome indicators against which the success of management measures in achieving specific management objectives is measured. The procedure covers all management measures, including those relating to the sustainable exploitation of the target stock; the mitigation of negative impacts on non-target species through bycatch, discarding, and indirect effects; and the protection of Endangered, Threatened, Protected (ETP) species and the physical environment. Please note that both the management processes of the North Pacific Fishery Management Council (NPFMC) for federal waters, and the Alaska Board of Fisheries (BOF) for state waters, allow for the continuous review of conservation and management measures. Such processes shall be clearly documented as relevant to key management measures for the fishery under assessment.</i>	☒

EVIDENCE:

Alaska's salmon fisheries are managed by ADFG. The Division of Commercial Fisheries manages commercial harvests, and, in conjunction with the Division of Subsistence, harvests by subsistence fishermen. The Division of Sport Fisheries manages sport and personal use resource harvests. Every three years (based on the BOF schedule) each Alaska Region updates its escapement information and submits a salmon stock status report to the BOF. This report, which is mandated in the Policy for the Management of Sustainable Salmon Fisheries (5AAC 39.222), reviews stock status within a management area, may recommend new and modified escapement goals based on the new data, identifies any stocks of concern, and provides management or action plans to deal with management issues.

ADFG fish area managers work closely with the BOF,⁶⁸ the fishing public and federal and international regulatory bodies to develop fishing regulations and solutions to issues that are, according to divisional policy described in the Strategic Plan, effective, minimally intrusive, and enforceable. In all regions of the state, these managers actively monitor fish stocks and fisheries and make adjustments in season as required, work closely with enforcement staff in policing fisheries, maintain a dialogue with local user groups and recreational anglers, assist in habitat conservation and restoration, and provide local expertise to the angling public. In addition, the BOF process provides a regularly scheduled public forum for all interested individuals, fishermen, fishing organizations,

⁶⁸ <http://www.adfg.alaska.gov/index.cfm?adfg=process.main>

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

environmental organizations, Alaskan Native organizations and other governmental and non-governmental entities to participate in the development of legal regulations for all salmon fisheries in the state. The BOF ensures that the process for the state's regulatory system relating to fish and wildlife resources operates publicly, efficiently and effectively. ADFG staff provides support for this public process, and ensures that the system is legal, timely, and accessible to all citizens of the state.

Current status/Appropriateness/Effectiveness:

If, as a result of the review process, it is determined that management measures are not achieving the specific management objectives they are designed to achieve, they are revised and updated as appropriate.



EVIDENCE:

Alaska's salmon fisheries are managed by ADFG. The Division of Commercial fisheries⁶⁹ manages commercial harvests, and, in conjunction with the Division of Subsistence,⁷⁰ harvests by subsistence fishermen. The Division of Sport Fisheries manages sport and personal use resource harvests¹⁰⁶.⁷¹ Every three years (based on the BOF schedule) each Alaska Region updates its escapement information and submits a salmon stock status report to the BOF. This report, which is mandated in the Policy for the Management of Sustainable Salmon Fisheries (5AAC 39.222),⁷² reviews the status of all stocks within a management area, recommends new and modified escapement goals based on the new data that have been collected and analyzed in the past three years, defines stocks of concern, and provides management or action plans to deal with fishery management issues. There is also frequent, routine annual and in-season review and revision of conservation and management measures within Commercial Fisheries Division, and between the Commercial Fisheries Division and the BOF.⁷³

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that within the fishery management system, procedures are in place to keep the efficacy of current conservation and management measures and their possible interactions under continuous review, and to revise or abolish them in the light of new information. Examples may include data showing recent regulation or management plan revisions.



EVIDENCE:

The availability and adequacy of the evidence is sufficient to substantiate that within the fishery management system procedures are in place to achieve the efficacy of current conservation and management measures and under continuous review in light of new information.

References: See citations in evidence

Numerical score:	Starting score	-	(	Number of EPs NOT met	x	3	)	=	Overall score
	10			0					10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)									High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)									Full Conformance
Non-conformance Number (if applicable):									

9.2.1.12 Supporting Clause 1.8.

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

Relevance: Relevant

⁶⁹ <http://www.adfg.alaska.gov/index.cfm?adfg=fishingCommercial.main>

⁷⁰ <http://www.adfg.alaska.gov/index.cfm?adfg=fishingSubsistence.main>

⁷¹ <http://www.adfg.alaska.gov/index.cfm?adfg=fishingSport.main>

⁷² http://www.housemajority.org/coms/jcis/pdfs/Sustainable_Salmon_Fisheries_Policy.pdf

⁷³ <http://www.adfg.alaska.gov/index.cfm?adfg=gameboard.main>

1.8.	The management arrangements and decision-making processes for the fishery shall be organized in a transparent manner.				
Evaluation Parameters					Met?
Current status: <i>There is transparency in management arrangements. Please note that both the management processes of the NPFMC for federal waters, and the BOF for state waters, shall be clearly documented to provide evidence for the transparency of these arrangements and decision-making processes.</i>					☑
EVIDENCE: The management arrangements and decision-making processes for Alaska salmon fisheries are organized in a very transparent manner, and are readily accessible to any person. Preseason management plans are published and sometimes presented in public forums by ADFG, and in-season management changes are issued as Emergency Orders that explain the rationale for the changes. Decision-making generally takes two forms Decisions made by the BOF, which occur during meetings open to the public, and decisions made by Commercial Fisheries Division managers to achieve BOF goals, which may be contained in written management plans, emergency orders, and management reports, all of which are available to the public. Public involvement is facilitated by 84 local advisory committees established by ADFG as authorized by Alaska Statute 16.05.260, which originally passed in 1959. Their purpose as established by the Joint Board of Fisheries and Game includes: developing regulatory proposals; evaluating regulatory proposals and making recommendations to the appropriate board; providing a local forum for fish and wildlife conservation and use, including matters relating to habitat; and consulting with individuals, organizations, and agencies.					
Effectiveness: <i>There is transparency in decision-making processes.</i>					☑
EVIDENCE: The management arrangements and decision-making processes for Alaska salmon fisheries are organized in a very transparent manner and are readily accessible to any person. Management arrangements generally take one of two forms: annual pre-season and in-season. Both types of arrangements are explained at the websites of each ADFG Commercial Fisheries Division fishing area. ⁷⁴ Decision-making also generally takes two forms: those made by the BOF and those made by ADFG to achieve BOF goals. Decisions made by Commercial Fisheries Division managers may be in the form of management plans, in-season Emergency Orders, and annual reports. This information, as stated above, is clearly presented on relevant webpages. The decision-making process of the BOF is transparent and readily accessible via the BOF's website, by attendance at the BOF meetings, and by active stakeholder participation in the BOF's decision-making process. ⁷⁵ The BOF actively and routinely encourages stakeholder involvement in the process. The BOF meets four to six times per year in communities around the state to consider proposed changes to fisheries regulations. The BOF uses biological and socioeconomic information provided by ADFG and public comments received from individuals and organizations inside and outside of the state, and guidance from the Alaska Department of Public Safety and Alaska Department of Law to create sound and enforceable regulations.					
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the management arrangements and decision-making processes for the fishery are organized in a transparent manner. Examples may include records of the management arrangements and decision-making processes.</i>					☑
EVIDENCE: The availability and adequacy of evidence is sufficient to substantiate that management, and decision-making processes are organized in a transparent manner.					
References:	See citations in evidence				
Numerical score:	Starting score	–	Number of EPs <u>NOT</u> met	x 3	= Overall score

⁷⁴ <http://www.adfg.alaska.gov/index.cfm?adfg=fishingcommercialbyarea.main>

⁷⁵ <http://www.adfg.alaska.gov/index.cfm?adfg=process.main>

1.8.	The management arrangements and decision-making processes for the fishery shall be organized in a transparent manner.				
	10	(	0	)	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)					High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)					Full Conformance
Non-conformance Number (if applicable):					

9.2.1.13 Supporting Clause 1.9.

1.9.	Management organizations not party to the Agreement to Promote Compliance with International Conservation and Management Measures by Vessels Fishing in the High Seas shall be encouraged to accept the Agreement and to adopt laws and regulations consistent with the provisions of the Agreement.				
Relevance:	Not relevant. Not applicable if the fishery does not occur in high seas. Supporting clause 1.9 is not relevant because staff from USA agencies participate on different international groups responsible for high seas fisheries management.				
Evaluation Parameters					Met?
Process: <i>Regulation to implement the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas has been adopted. Assessors shall consult the following document http://www.fao.org/docrep/meeting/003/x3130m/X3130E00.htm for reference to the Agreement.</i>					☐
EVIDENCE:					
Current status/Appropriateness/Effectiveness: <i>There are laws regulating high seas fishing activity. Describe how they accomplish this.</i>					☐
EVIDENCE:					
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization is party to the Agreement to Promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas, or has adopted laws and regulations consistent with the provisions of the Agreement. Examples may include reports on the management of high seas fishing activities.</i>					☐
EVIDENCE:					
References:					
Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met x 3	= Overall score
	10		(		NA
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)					
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)					
Non-conformance Number (if applicable):					

9.2.2 Fundamental Clause 2. Coastal area management frameworks

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.

9.2.2.1 Supporting Clause 2.1.

2.1.	Within the fisheries management organization’s jurisdiction, an appropriate policy, legal, and institutional framework shall be adopted in order to achieve sustainable and integrated use of living marine resources, (1) taking into account the fragility of coastal ecosystems and finite nature of their natural resources, (2) allowing for determination of the possible uses of coastal resources and governing access to them, and (3) recognizing the rights and needs of coastal communities and their customary practices to the extent compatible with sustainable development. In setting policies for the management of coastal areas, States shall take due account of the risks and uncertainties involved.		
Relevance:	Relevant		
Evaluation Parameters			
Process:			
A mechanism exists by which the integrated management of multiple coastal area uses is conducted, the possible uses of coastal resources are assessed, and access to them is governed. Accordingly, policies for the management of the coastal area are set. Assessment teams shall document how existing authorities and/or processes cooperate and interact together to manage coastal resources (living and non-living) in a transparent, organized, and sustainable way that minimizes environmental issues while taking into account the socio-economic aspects, needs, and interests of the various stakeholders of the coastal zone.			☑
EVIDENCE:			
The salmon fishery management organizations in Alaska (principally ADFG and NMFS) participate in coastal area management-related institutional frameworks processes, including the National Environmental Policy Act (NEPA) and Essential Fish Habitat (EFH). These processes include decision-making and activities relevant to the fishery resource and its users in support of sustainable and integrated use of living marine resources and avoidance of conflict among users. ADFG is responsible for the protection, management, conservation, and restoration of Alaska's fish and game resources. The BOF is responsible for considering and adopting regulations to allocate resources between user groups; establishing fish reserves and conservation areas, fishing seasons, quotas, bag limits and size restrictions; habitat protection; stock enhancement; and developing commercial, subsistence, sport and personal use fisheries. The Department of Environmental Conservation (DEC) implements statutes and regulations affecting air, land and water quality. DEC is the lead state agency for implementing the federal Clean Water Act, which provides considerable opportunity to maintain high quality fish and wildlife habitat through pollution prevention. The MSFCMA includes provisions concerning identification and conservation of EFH. The NMFS and regional Fishery Management Councils must describe and identify EFH in fishery management plans), minimize adverse effects of fishing on EFH, and encourage the conservation and enhancement of EFH. NOAA Fisheries' Habitat Conservation Division (HCD) works in coordination with industries, stakeholder groups, government agencies, and private citizens to avoid, minimize, or offset the adverse effects of human activities on EFH and living marine resources in Alaska.			
Current status/Appropriateness/Effectiveness:			
The coastal management framework includes explicit consideration of the fragility of coastal ecosystems, the finite nature of coastal resources, and the needs of coastal communities, and accounts for the rights and customary practices of coastal communities. These policies take due account of risks and uncertainties.			☑
EVIDENCE:			
The salmon fishery management organizations in Alaska (principally ADFG and NOAA) participate in coastal area management-related institutional frameworks processes such as NEPA, EFH. These processes include decision-making and activities relevant to the fishery resource and its users in support of sustainable and integrated use of living marine resources and avoidance of conflict among users.			
ADFG is responsible for the protection, management, conservation, and restoration of Alaska's fish and game resources. The BOF is responsible for considering and adopting regulations to allocate resources between user groups; establishing fish reserves and conservation areas, fishing seasons, quotas, bag limits and size restrictions; habitat protection; stock enhancement; and developing			

- 2.1. Within the fisheries management organization’s jurisdiction, an appropriate policy, legal, and institutional framework shall be adopted in order to achieve sustainable and integrated use of living marine resources, (1) taking into account the fragility of coastal ecosystems and finite nature of their natural resources, (2) allowing for determination of the possible uses of coastal resources and governing access to them, and (3) recognizing the rights and needs of coastal communities and their customary practices to the extent compatible with sustainable development. In setting policies for the management of coastal areas, States shall take due account of the risks and uncertainties involved.**

commercial, subsistence, sport and personal use fisheries. ADFG has the statutory responsibility for protecting freshwater anadromous fish habitat and providing free passage for anadromous and resident fish in freshwater bodies (AS 16.05.841871). Any activity or project that is conducted below the ordinary high-water mark of an anadromous stream requires a Fish Habitat Permit. ⁷⁶

In 1976, Governor Hammond introduced the Alaska Coastal Management Program in response to increasing demands on state coastal resources. The program provided for the establishment of local coastal districts and a strong role for local governments in coastal development decisions. In 1984, Governor Sheffield adopted a coordinated review process for coastal projects. In 2003, Governor Murkowski amended the coastal program to reduce local communities' voice in coastal development decisions; removed consideration of air and water quality matters from the coordinated review process; and eliminated the regionally represented Coastal Policy Council, transferring its powers to a single agency, the DNR. In 2011, the Alaska legislature and the governor failed to agree on conditions for extending the coastal program and the program expired on July 1, 2011. ⁷⁷

DEC implements statutes and regulations affecting air, land and water quality. DEC is the lead state agency for implementing the federal Clean Water Act, which provides considerable opportunity to maintain high quality fish and wildlife habitat through pollution prevention. ADFG protects estuarine and marine habitats primarily through cooperative efforts involving other state and federal agencies and local governments. ADFG has jurisdiction over the mouths of designated anadromous fish streams and legislatively designated state special areas (critical habitat areas, sanctuaries and refuges). Some marine species also receive special consideration through the state Endangered Species program. DNR manages all state-owned land, water and natural resources except for fish and game. This includes most of the state’s tidelands out to the three-mile limit and approximately 34,000 miles of coastline. DNR authorizes the use of log-transfer sites, access across state land and water, set-net sites for commercial gill net fishing, mariculture sites for shellfish farming, lodge sites and access for the tourism industry, and water rights and water use authorizations. DNR can use the state Endangered Species Act to preserve natural habitat of species or subspecies of fish and wildlife that are threatened with extinction.

NEPA processes provide public information and opportunity for public involvement that are robust and inclusive at both the state and federal levels. Decisions are made through public processes and involvement of fishery managers, fishermen, fishing organizations and fishing communities that are actively invited through publicly advertised and scheduled meetings. Assessing the social and cultural value of coastal resources is an explicit part of the decision-making process for allocation and use of resources. All construction activities in the coastal zone (e.g., work on docks, breakwaters, harbors and other infrastructure) are subject to the NEPA process. These processes take into account all resources and users of those resources. Conflict resolution mechanisms include both administrative (through governmental agencies) and legal (through courts of law) procedures.

ADFG fisheries management staff at the regional and area levels meet routinely with federal fisheries staff at both formal and informal meetings to discuss salmon fishery-related activities including research projects, in-season management issues and coastal developments. Area Biologists and other ADFG employees also routinely meet with fishery groups, environmental groups, developers, and other agencies with management authority (e.g., USFS, NMFS, and USFWS) to ensure the needs of Alaska's fisheries are considered when making decisions about development or policies.

The MSFCMA includes provisions concerning identification and conservation of EFH, which is defined as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” The NMFS and regional Fishery Management Councils must describe and identify EFH in fishery management plans, minimize to the extent practicable the adverse effects of fishing on EFH, and identify other actions to encourage the conservation and enhancement of EFH. Federal agencies that authorize, fund, or undertake actions that may adversely affect EFH must consult with NMFS, and NMFS must provide conservation recommendations to federal and state agencies regarding actions that would adversely affect EFH. ⁷⁸ All fishery management plans include a description

⁷⁶ <http://www.adfg.alaska.gov/index.cfm?adfg=habitatregulations.main>

⁷⁷ [http://www.skagway.org/vertical/sites/%7B7820C4E363B94E6795BA7C70FBA51E8F%7D/uploads/Information on the Alaska Coastal Management Program Initiative.pdf](http://www.skagway.org/vertical/sites/%7B7820C4E363B94E6795BA7C70FBA51E8F%7D/uploads/Information%20on%20the%20Alaska%20Coastal%20Management%20Program%20Initiative.pdf)

⁷⁸ <http://www.npfmc.org/habitat-protections/essential-fish-habitat-efh/>

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

and identification of EFH, adverse impacts, and actions to conserve and enhance EFH. Maps of EFH areas are useful for understanding potential effects of proposed development and other activities. NOAA Fisheries' Habitat Conservation Division works in coordination with industries, stakeholder groups, government agencies, and private citizens to avoid, minimize, or offset the adverse effects of human activities on EFH and living marine resources in Alaska. This work includes conducting and/or reviewing environmental analyses for a large variety of activities ranging from commercial fishing to coastal development to large transportation and energy projects. The division identifies technically and economically feasible alternatives and offers recommendations for the conservation of valuable living marine resources. The division focuses on activities in habitats used by federally managed fish species located offshore, nearshore, in estuaries, and in freshwater areas important to anadromous salmon.⁷⁹

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that within the fisheries management organization's jurisdiction, an appropriate policy within the legal and institutional framework has been adopted in order to achieve sustainable and integrated use of living marine resources. Examples may include coastal management plans or other policy documents, and frameworks for resource/coastal management.



EVIDENCE:

The availability and quality of the evidence is sufficient to substantiate that within the fisheries management organization's jurisdiction an appropriate policy has been adopted to achieve sustainable and integrated use of living marine resources.

References: See citations in evidence

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x 3	)	=	Overall score
	10			0				10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)								High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)								Full Conformance
Non-conformance Number (if applicable):								--

9.2.2.2 Supporting Clause 2.1.1.

2.1.1. States shall establish mechanisms for cooperation and coordination in planning, development, conservation, and management of coastal areas.

Relevance: Relevant

Evaluation Parameters

Met?

Process:

There is a mechanism to allow cooperation between neighboring States to improve coastal resource management.



EVIDENCE:

Salmon management over such a vast area requires a complex mixture of domestic and international bodies, treaties, regulations, and other agreements. Federal and state agencies cooperate in managing salmon fisheries. There are mechanisms for cooperation and coordination among national authorities involved in planning, development, conservation and management of coastal areas such as NPFAC, PSC, and PFMSC. Salmon management has been the responsibility of many agencies, including ADFG, and NOAA.

⁷⁹ <https://alaskafisheries.noaa.gov/habitat>

2.1.1. States shall establish mechanisms for cooperation and coordination in planning, development, conservation, and management of coastal areas.

The networking of these groups is essentially designed to preserve this valuable resource. ADF&G's Habitat Division is delegated by the Commissioner to implement the state's Title 16 authority for Fish Habitat and Special Area permitting. Unlike many of ADF&G's regulations, which are developed through the Board process and address harvest, Fish Habitat and Special Area laws address land use activities in fish-bearing streams and in the state's legislatively designated refuges, critical habitat areas, and sanctuaries through a project review and permitting process.

NMFS Fisheries' Habitat Conservation Division (HCD) works in coordination with industries, stakeholder groups, government agencies, and private citizens to avoid, minimize, or offset the adverse effects of human activities on Essential Fish Habitat (EFH) and living marine resources in Alaska.

Current status/Appropriateness/Effectiveness:

There are records of cooperation. Examples may include fishery, fishery enhancement, or other agreements or records from international forums.


EVIDENCE:

Salmon management over such a vast area requires a complex mixture of domestic and international bodies, treaties, regulations, and other agreements. Federal and state agencies cooperate in managing salmon fisheries.

Salmon management has been the responsibility of many agencies, including ADFG and NMFS. The networking of these groups is designed to preserve this valuable resource. ADFG's Habitat Division⁸⁰ is delegated by the Commissioner to implement the state's Title 16 authority for Fish Habitat and Special Area permitting. Unlike many of Fish and Game's regulations, which are developed through the BOF process and address harvest, Fish Habitat and Special Area laws address land use activities in fish-bearing streams and in the state's legislatively designated refuges, critical habitat areas, and sanctuaries through a project review and permitting process.

For example, Alaska Statute 16.05.871(a) requires the ADFG to specify the various rivers, lakes, and streams, or parts of them, that are important for spawning, rearing, or migration of anadromous fishes.⁸¹ Adopted by reference under 5 AAC 95.011 of the Alaska Administrative Code, the Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes (referred to as the "Catalog") and the Atlas to the Catalog of Waters Important for Spawning, Rearing or Migration of Anadromous Fishes (referred to as the "Atlas") are used to make this specification. ADFG has the statutory responsibility for protecting freshwater anadromous fish habitat and providing free passage for anadromous and resident fish in fresh water bodies (AS 16.05.841-871). Any activity or project that is conducted below the ordinary high-water mark of an anadromous stream requires a Fish Habitat Permit.

NMFS Fisheries' Habitat Conservation Division⁸² (HCD) works in coordination with industries, stakeholder groups, government agencies, and private citizens to avoid, minimize, or offset the adverse effects of human activities on Essential Fish Habitat (EFH) and living marine resources in Alaska. This work includes conducting and/or reviewing environmental analyses for a large variety of activities ranging from commercial fishing to coastal development to large transportation and energy projects. HCD identifies technically and economically feasible alternatives and offers realistic recommendations for the conservation of valuable living marine resources. HCD focuses on activities in habitats used by federally managed fish species located offshore, nearshore, in estuaries, and in freshwater areas important to anadromous salmon. The Pacific States Marine Fisheries Commission's⁸³ (PSMFC) Habitat Program is involved in programs on the West Coast that further habitat protection for anadromous, estuarine, and marine fish species. Program efforts are focused on watershed and estuarine conservation and restoration, work with regional science and policy bodies and marine debris and pollution abatement. The program also works to assist fishermen and communities with recycling fishing nets, gear, and other marine debris and tracking and promoting efforts to remove derelict fishing gear.

PSMFC participates in various groups and forums that promote habitat conservation planning and restoration activities, including the regional Pacific Marine and Estuarine Fish Habitat Partnership and the West Coast Governor's Marine Debris Alliance. There are seven fish habitat partnerships established along the U.S. West Coast. PSMFC is engaged at the national level as a representative on

⁸⁰ <http://www.adfg.alaska.gov/index.cfm?adfg=habitatregulations.main>

⁸¹ <https://www.adfg.alaska.gov/sf/SARR/AWC/>

⁸² <https://alaskafisheries.noaa.gov/habitat>

⁸³ <http://habitat.psmfc.org/>

2.1.1.	States shall establish mechanisms for cooperation and coordination in planning, development, conservation, and management of coastal areas.				
the board of the National Fish Habitat Partnership. In addition, PSMFC is actively involved in two of the regional fish habitat partnerships; the Pacific Marine and Estuarine Fish Habitat Partnership and the California Fish Passage Forum.					
Finally, several entities have significant influence on the quality of freshwater spawning and rearing habitats for salmon throughout Alaska. Among these are the UFS, the Bureau of Land Management, NPS, USFWS, Alaska state parks and forests, Alaska Native regional and village corporations, municipalities, boroughs, and private landowners that control watersheds used by salmon.					
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the States establish mechanisms for cooperation and coordination in planning, development, conservation, and management of coastal areas. Examples may include reports or data on the international cooperation/information exchange in these events.</i>					☒
EVIDENCE: The availability and adequacy of the evidence is sufficient to substantiate that the states establish mechanisms for cooperation and coordination in planning, development, conservation and management of coastal areas.					
References:	See citations in evidence				
Numerical score:	Starting score	Number of EPs <u>NOT</u> met			Overall score
	10	-	(	0	x 3) = 10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)					High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)					Full Conformance
Non-conformance Number (if applicable):					

9.2.2.3 Supporting Clause 2.1.2.

2.1.2.	The fisheries management organization shall ensure that the authority or authorities representing the fisheries sector and fishing communities in the coastal management process have the appropriate technical capacities and financial resources.		
Relevance:	Relevant		
Evaluation Parameters			
Process:			Met?
There are appropriate technical capacities and financial resources.			☒
EVIDENCE:			
NPAFC, PSC and PSMFC have the appropriate technical capacities and financial resources to effectively represent the fisheries sector in the coastal management process. Agency operations are supported through contributions, annual dues, federal grants and special contracts. ADFG has an operating budget of approximately \$200 million, which comes through a variety of funding sources, including federal receipts, general fund receipts, and fish and game fund receipts. ADFG’s success in performing coastal management functions for the fisheries sector is probably best measured by the achievement of salmon escapement goals to sustain these stocks and the fisheries that depend upon them.			
Current status/Appropriateness/Effectiveness:			☒
It can be determined with confidence that there are appropriate technical capacities and financial resources.			
EVIDENCE:			

2.1.2. The fisheries management organization shall ensure that the authority or authorities representing the fisheries sector and fishing communities in the coastal management process have the appropriate technical capacities and financial resources.

Management agencies such as NPAFC, PSC and PSMFC and their activities involved in the salmon fishery are financed by national and international agreements. NPAFC operations are supported through contributions made by the member parties.⁸⁴ PSC operation costs are funded costs are financed with annual dues paid by each national government. PSMFC's activities are funded through federal grants, special contracts, and dues from its member states.⁸⁵

ADFG has an operating budget of approximately \$250 million which consists of a variety of funding sources, including federal receipts, general fund receipts, fish and game fund receipts, and several other sources. All of the state budgets are submitted through the State Office of Management and Budget and funded by the state legislature.⁸⁶ ADFG also has an annual capital budget that varies greatly from year to year. It consists of a mixture of federal receipts, general fund receipts, fish and game fund receipts, and other funding sources.

Managing commercial, subsistence, and personal use harvests in ways that protect the reproductive potential of salmon stocks is the most basic responsibility of ADFG's Division of Commercial Fisheries.⁸⁷ Its success in performing this function is the most direct indicator of program success, as well as the best indicator of continued healthy fish stocks. Success in achieving escapement goals is also the most common measure of success that salmon managers and research staff apply to their own performance.

The division annually deploys and operates numerous weirs, counting towers, and sonar sites to conduct escapement counts. Aerial and foot surveys are also used extensively in the absence of other means of counting escapement. The proportion of escapement goals achieved state-wide has been fairly consistent during the last five years. While fisheries have been restricted in the face of lower abundance of some species, in some cases the goals were still not achieved. Failure to achieve goals over several years' results in increasing restrictions to affected fisheries.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fisheries management organization ensures that the authority or authorities representing the fisheries sector and fishing communities in the coastal management process have the appropriate technical capacities and financial resources. Examples may include reports or data, overall operating staff, and financial resources/budgets available.



EVIDENCE:

The availability and quality of the evidence is sufficient to substantiate that the fisheries management organization ensures that the authority or authorities representing the fisheries sector and fishing communities in the coastal management process have the technical capacities and financial resources.

References: See citations in evidence

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)									High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)									Full Conformance
Non-conformance Number (if applicable):									

⁸⁴ <http://www.npafc.org/new/publications/HandBook/Handbook%203rd%20E%20English.pdf>

⁸⁵ <http://www.psmfc.org/psmf-info/overview>

⁸⁶ <http://www.adfg.alaska.gov/index.cfm?adfg=about.budgets>

⁸⁷ <https://www.omb.alaska.gov/html/performance/program-indicators.html?p=55&r=1>

9.2.2.4 Supporting Clause 2.2.

2.2.	Representatives of the fisheries sector and fishing communities shall be consulted in the decision-making processes involving activities related to coastal area management planning and development. The public, as well as others affected, shall also be kept aware of the need for protection and management of coastal resources, and shall participate in the coastal management process.
Relevance:	Relevant
Evaluation Parameters	Met?
Process: <i>Describe how fishery-related information is disseminated and how a process is in place to consult with the fishery sector and fishing communities.</i>	☒
EVIDENCE: Representatives from fishery management organizations and fishing communities participate in coastal area management planning through the federal NEPA processes. This includes decision-making processes and activities relevant to the fishery resource and its users in support of sustainable and integrated use of living marine resources and avoidance of conflict among users. The review process requires participation by the project applicant; State resource agencies, including DEC, ADFG, and DNR; the affected local coastal district office; and other interested members of the public, including fishermen's organizations and private individuals.	
Current status/Appropriateness/Effectiveness: <i>There are records of consultations with the fisheries sector and fishing communities. Attempts have been made to create public awareness on the need for protection and management of coastal resources, and those affected by the management process have been made aware of its provision.</i>	☒
EVIDENCE: Representatives from fishery management organizations and fishing communities participate in coastal area management planning through the federal National Environmental Policy Act (NEPA) processes. This includes decision-making processes and activities relevant to the fishery resource and its users in support of sustainable and integrated use of living marine resources and avoidance of conflict among users. Construction activities in the coastal zone (e.g., work on docks, breakwaters, harbors and other infrastructure) are subject in many cases to the NEPA process. These processes deliberately take into account all resources and users of those resources. Conflict resolution mechanisms include both administrative (through governmental agencies) and legal (through courts of law) procedures. The review process requires participation by: the project applicant;⁸⁸ State resource agencies including the Alaska Departments of Environmental Conservation (DEC), Fish and Game (ADFG), and Natural Resources (DNR); the affected local coastal district office; and other interested members of the public, including fishermen's organizations and private individuals. Other state and federal programs affecting fishery resources in Alaska include the National Fish Habitat Action Plan administered by the U.S. Fish and Wildlife Service (USFWS). The mission of this program is to protect, restore and enhance fish and aquatic communities through partnerships with state and local groups and agencies. Coastal area management planning and development was governed by the Alaska Coastal Management Program from 1972 to 2011. This program was This voluntary program was implemented following passage by the federal government of the Coastal Zone Management Act. Federally recognized coastal management plans adopted under this program provide state and local governments with authority over development in federal agencies, lands and waters. After withdrawal from the federal ACMP in 2011, Federal activities in the coastal management zone remained subject to NEPA requirements and processes which provide an extensive and formal public review and comment process. This process continues to provide state involvement in federal activities but the state can no longer object to federal activities, licenses and permits through the consistency review process under the ACMP. Non-federal coastal area management and development activities continue to be subject to normal state planning, review and regulatory processes and requirements. ADFG works closely with the BOF,⁸⁹ fishing communities and federal and international regulatory bodies provide opportunities for public review and comment on coastal area management and planningThe BOF process provides a regularly scheduled public forum	

⁸⁸ <http://www.adfg.alaska.gov/index.cfm?adfg=uselicense.main>

⁹⁰ <http://www.adfg.alaska.gov/index.cfm?adfg=process.main>

2.2. Representatives of the fisheries sector and fishing communities shall be consulted in the decision-making processes involving activities related to coastal area management planning and development. The public, as well as others affected, shall also be kept aware of the need for protection and management of coastal resources, and shall participate in the coastal management process.

for all interested individuals, fishermen, fishing organizations, environmental organizations, Alaskan Native organizations and other governmental and non-governmental entities to participate in the state's regulatory system relating to fish and wildlife resources operates publicly, efficiently and effectively.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that representatives of the fisheries sector and fishing communities are consulted in the decision-making processes and involved in other activities related to coastal area management planning and development. The public, and others affected, are also kept aware of the need for the protection and management of coastal resources and are participants in the management process. Examples may include public records of consultation activities and other available documentation published on the internet or distributed at public meetings.



EVIDENCE:

The availability and adequacy of the evidence is sufficient to substantiate that members of the fisheries sector are consulted in decision making processes related to coastal area management planning and development.

References: See citations in evidence

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10		(	0	x	3	)	=	10

Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)

High

Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)

Full Conformance

Non-conformance Number (if applicable):

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9.2.2.5 Supporting Clause 2.3.

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

Relevance: Relevant

Evaluation Parameters

Met?

Process:

These practices have been adopted, and there is a process to regulate fishing gear, methods, and vessels so as to avoid risk of conflict. If conflicts arise, there is a process in place to settle conflicts between fishery users and other users.



EVIDENCE:

The BOF process serves to provide a forum for fishery conflict resolution. Further, the NEPA review process deliberately takes into account all resources and users of those resources in order to resolve potential conflicts among users before project approvals are given. The NPFMC also encourages testimony from fishers, the environmental community, and the public at-large at meetings and hearings. Conflict resolution mechanisms include both administrative (through governmental agencies) and legal (through courts of law) procedures. However, in most cases management plan and project approvals are withheld until substantive conflicts are resolved.

Current Status/Appropriateness/Effectiveness:

Describe these practices and their effectiveness within the fishery sector, and between fishers and other coastal users.



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

EVIDENCE:

The BOF process serves to provide a forum for fishery conflict resolution.⁹⁰ The BOF is a seven-member board appointed by the governor and confirmed by the legislature which sets fishing seasons, bag limits, methods and means for the state's commercial, subsistence, sport, guided sport, and personal use fisheries. It also sets policy and direction for management of the state's fishery resources and makes all decisions on allocation of those resources among users. ADFG then manages the fisheries based on BOF regulations. As a part of making decisions on allocation of the fishery resources, the BOF sets fishery openings by gear-type by time and area. When there are concerns that conflict may arise between gear-types, the BOF generally requires the different gear types to operate in separate areas or at different times.

The NEPA process, deliberately takes into account all resources and users of those resources in order to resolve potential conflicts among users before project approvals are given.⁹¹ Conflict resolution mechanisms include both administrative (through governmental agencies) and legal (through courts of law) procedures. However, in most cases project approvals are withheld until substantive conflicts are resolved.

All regular NPFMC meetings, committee meetings and advisory panel meetings are open to the public. Council meetings include a section for public testimony on each issue on the agenda.⁹² NPFMC and other public meetings are held throughout Alaska and occasionally in Portland and Seattle. Written public comments and summaries are provided to NPFMC members in their briefing books.

Members of the commercial and recreational fishery, the environmental community, and the public at-large are encouraged to testify at NPFMC meetings and hearings. Public testimony to the Advisory Panel may lead to a proposal to the NPFMC, which may then lead to a discussion paper and NPFMC development of alternatives to address the problem or situation identified.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that fisheries practices that avoid conflict among fishers and other users of the coastal area (e.g., fisheries enhancement facilities, tourism, energy) are adopted and fishing is regulated in such a way as to avoid risk of conflict among fishers using different vessels, gear, and fishing methods. Procedures and mechanisms are established at the appropriate administrative level to settle conflicts that arise within the fisheries sector, and between fisheries resource users and other coastal users. Examples may include laws and regulations or other documents.



EVIDENCE:

The availability and adequacy of the evidence is sufficient to substantiate that fisheries practices that avoid conflict among fishers and other users in the coastal areas are adopted and fishing is regulated to avoid risk of conflict.

References: See citations in evidence

Numerical score:	Starting score	Number of EPs <u>NOT</u> met				Overall score
	10	-	(	0	x 3)	= 10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)						High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)						Full Conformance
Non-conformance Number (if applicable):						--

⁹⁰ <http://www.adfg.alaska.gov/index.cfm?adfg=process.main>

⁹¹ <https://alaskafisheries.noaa.gov/fisheries/nepa-guidance>

⁹² http://www.npfmc.org/wp-content/PDFdocuments/help/Navigating_NPFMC.pdf

9.2.2.6 Supporting Clause 2.4.

2.4.	States' fisheries management organizations and sub-regional or regional fisheries management organizations and arrangements shall give due publicity to conservation and management measures and ensure that laws, regulations, and other legal rules governing their implementation are effectively disseminated. The bases and purposes of such measures shall be explained to users of the resource in order to facilitate their application and thus gain increased support in the implementation of such measures.
Relevance:	Relevant
Evaluation Parameters	
Process: <i>There is a process that allows for fishery-related information to be disseminated.</i>	☒
EVIDENCE: Agencies such as ADFG, NOAA, and NPMFC have developed websites with information on management and conservation measures for interested parties. This information includes news releases, species profiles, and newsletters. ADFG operates public education programs that illustrate the importance of salmon to Alaska's culture, economy and ecosystem. ADFG also provides educational materials to educators and the public, both online and in paper copy, and participates regularly in publicly attended sportsman shows, commercial fisheries trade shows and gear group meetings to interact with and educate thousands of members of the public. In 2007, ADFG Sport Fish Division developed an Aquatic Resources Implementation Plan for Alaska's Comprehensive Wildlife Conservation Strategy. The intent of the plan is to initiate or expand partnerships with other agencies and non-governmental organizations to conserve, improve, and manage Alaska's habitats for aquatic species; develop education and outreach programs and materials related to aquatic species and their habitats; and to develop curricula and supporting material that describes the relationship between aquatic species, sport-fished species, and the importance of aquatic habitats by providing targeted audiences with educational programs that focus on aquatic resource-based stewardship principles and encourage active stewardship practices.	
Current status/Appropriateness/Effectiveness: <i>There is a record of the disseminated information, and is it disseminated effectively, and the basis and purposes of such regulation explained to users.</i>	☒
EVIDENCE: Agencies such as ADFG, NMFS, and NPFMC have developed websites with information on management and conservation measures for interested parties. Some of this information is news releases, species profiles, and newsletters. ADFG operates public education programs⁹³ including the modules "salmon in the classroom," and "Alaska's Wild Salmon" that illustrate the importance of salmon to Alaska's culture, economy and ecosystem. ADFG also provides educational materials to educators and the public, both on-line and in hard copy, and participates regularly in public attended Sportsman Shows, Commercial Fisheries Trade shows and Gear Group meetings to interact with and educate thousands of members of the public. In 2007, ADFG Sport Fish Division developed an Aquatic Resources Implementation Plan for Alaska's Comprehensive Wildlife Conservation Strategy (CWCS).⁹⁴ The intent of the plan is to initiate or expand partnerships with other agencies and non-governmental organizations (NGO's) to conserve, improve, and manage Alaska's habitats for aquatic species, develop education and outreach programs and materials related to aquatic species and their habitats, and to develop curricula and supporting material that describes the relationship between aquatic species, sport-fished species, and the importance of aquatic habitats by providing targeted audiences with educational programs that focus on aquatic resource-based stewardship principles and encourage active stewardship practices. The division plans to develop a CWCS aquatic species notebook series and publish articles regarding the implementation of CWCS for aquatic species in the Otolith and Alaska Wildlife News. Activities such as these serve to keep the public aware of the need to participate in the protection and management of coastal resources.	
Evidence Basis:	☒

⁹³ <http://www.adfg.alaska.gov/index.cfm?adfg=anglereducation.main>

⁹⁴ https://www.adfg.alaska.gov/static/species/wildlife_action_plan/cwcs_main_text_combined.pdf

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

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that States' fisheries management organizations and sub-regional or regional fisheries management organizations and arrangements give due publicity to conservation and management measures and ensure that laws, regulations and other legal rules governing their implementation are effectively disseminated. The bases and purposes of such measures are explained to users of the resource in order to facilitate their application and thus gain increased support in the implementation of such measures. Examples may include records of such management measures published in the internet or distributed at public meetings.

EVIDENCE:

The availability and adequacy of the evidence is sufficient to substantiate that the State's fisheries management organizations and sub-regional or regional fisheries management organizations give due publicity to conservation and management measures are effectively disseminated.

References: See citations in evidence

Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10

Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)

High

Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)

Full Conformance

Non-conformance Number (if applicable):

9.2.2.7 Supporting Clause 2.5.

2.5. The economic, social, and cultural value of coastal resources shall be assessed by the appropriate fisheries management organization in order to assist decision making on their allocation and use.

Relevance: Relevant

Evaluation Parameters

Met?

Process:

There is a system that allows for socio-economic value assessments and cultural value assessments to be carried out.



EVIDENCE:

The value of coastal salmon resources from economic, cultural and social perspectives are regularly assessed in order to assist decision makers with allocation and use decisions. Alaska's CFEC helps conserve and maintain the economic health of commercial fisheries by limiting the number of participating fishers. NEPA processes provide the public with information and opportunity for public involvement at both the state and federal levels. Decisions are made through public processes and involvement at publicly advertised and scheduled meetings. Assessing the social and cultural value of coastal resources is stated as an explicit part of the decision-making process for allocation and use of resources.

Subsistence fishing in Alaska is critical to the cultural and economic wellbeing of more than 100,000 Alaska Natives and non-Natives living in rural Alaska. The average annual rural subsistence harvest of fish and wildlife in Alaska is about 375 pounds of food per person. Nowhere else in the United States is there such a heavy reliance upon wild food. The Federal Subsistence Management Program is a multi-agency federal effort to provide subsistence opportunities to rural Alaskans on federally managed public lands and waters while maintaining healthy populations of fish and wildlife. Alaska's indigenous inhabitants have relied upon the traditional harvest of wild foods for thousands of years, but subsistence is also important for non-Native Alaskans in rural Alaska.

2.5.	The economic, social, and cultural value of coastal resources shall be assessed by the appropriate fisheries management organization in order to assist decision making on their allocation and use.

ADFG's Subsistence Division scientifically gathers, quantifies, evaluates and reports on customary and traditional uses of the state's fish and wildlife resources. This information is used by the BOF in determining reasonable opportunities for customary and traditional use. ADFG maintains an online library of detailed reports on customary and traditional use of fish and game resources in Alaska.

Current status/Appropriateness/Effectiveness:

There are socio-economic value assessments and cultural value assessments, both of which are effectively assisting decision making on resource allocation and use.



EVIDENCE:

The value of coastal salmon resources from economic, cultural and social perspectives are regularly assessed in order to assist decision makers with allocation and use decisions. The Alaska Commercial Fisheries Entry Commission (CFEC) helps conserve and maintain the economic health of Alaska's commercial fisheries by limiting the number of participating fishers. Through continuing research on economic conditions for each limited-entry fishery, CFEC maintains publicly accessible data bases showing current and historic information on numbers of permits issued/renewed, number of permits actually fished, total weight of fish harvested, average gross earnings per permit for Alaska residents and non-residents, and average selling price of permits in each fishery.⁹⁵ Economic impacts of the private non-profit salmon hatchery program in Southeast Alaska have been assessed regularly.⁹⁶

The NEPA processes provide the public with information and opportunity for public involvement that is robust and inclusive at both the state and federal levels. Decisions are made through public processes and involvement of fishery managers, fishermen, fishing organizations and fishing communities is actively invited through publicly advertised and scheduled meetings. Assessing the social and cultural value of coastal resources is stated as an explicit part of the decision-making process for allocation and use of resources.

Subsistence fishing in Alaska is critical to the cultural and economic wellbeing of more than 100,000 Alaska Natives and non-Natives living in rural Alaska.⁹⁷ The average rural subsistence harvest of fish and wildlife in Alaska is about 375 pounds of food per person meat, fish, and poultry per year. Nowhere else in the United States is there such a heavy reliance upon wild food. However, only about 4% of the fish harvested in Alaska is used for subsistence purposes. The Federal Subsistence Management Program is a multi-agency federal effort to provide the opportunity for a subsistence way of life for rural Alaskans on federally managed public lands and waters while maintaining healthy populations of fish and wildlife.⁹⁸ This dependence on wild resources is cultural, social and economic. Alaska's indigenous inhabitants have relied upon the traditional harvest of wild foods for thousands of years and have passed this way of life, its culture, and values down through generations. Subsistence has also become important to many non-Native Alaskans, particularly in rural Alaska. The mission of the ADFG Subsistence Division is to scientifically gather, quantify, evaluate and report on customary and traditional uses of the state's fish and wildlife resources, and to then provide this information to fisheries and wildlife programs and to the BOF for their use in determining reasonable opportunities for customary and traditional use.⁹⁹ ADFG maintains an online library of detailed reports on customary and traditional use of fish and game resources in Alaska.

The Limited Entry Act was passed in 1973 in order to provide resource conservation and prevent economic distress among Alaskan fishers.¹⁰⁰ Some of the key features included issuance of permits to natural persons only, prohibition on permit leasing, prohibition on use of permits as collateral for loans and allowance for free transferability of permits between persons. Thus, permit holders are free to transfer their permits through gift, inheritance or sale. According to Commercial Fishery Entry Commission (CFEC) reports,¹⁰¹ many people are concerned that free transferability of fishing permits might have undesirable impacts on Alaskan communities and result in erosion of their economic base. CFEC examines these issues through research and preparation of reports on the status of permits and changes in their distribution. CFEC suggests limited entry protected Alaskan fisheries from an influx of new fishermen from other West Coast fisheries where fishing opportunities have been severely reduced by court decisions and stock status

⁹⁵ <https://www.cfec.state.ak.us/>

⁹⁶ https://www.adfg.alaska.gov/static/fishing/PDFs/hatcheries/se_hatcheries_10.pdf,
http://www.adfg.alaska.gov/index.cfm?adfg=wildlifeneews.view_article&articles_id=775

⁹⁷ <https://seagrant.uaf.edu/map/fisheries/>

⁹⁸ <https://www.doi.gov/subsistence>

⁹⁹ <http://www.adfg.alaska.gov/index.cfm?adfg=divisions.submission>

¹⁰⁰ <https://www.cfec.state.ak.us/pregs/Homan30YrsLimitedEntrySummary.pdf>

¹⁰¹ https://www.cfec.state.ak.us/Publications/permit_holdings.htm

2.5.	The economic, social, and cultural value of coastal resources shall be assessed by the appropriate fisheries management organization in order to assist decision making on their allocation and use.

concerns. The program was designed based on salmon fisheries that are characterized by owner/operator participants and fishery management based on escapement.

Participants in a fishery who believe the number of gear operators should be limited in order to preserve the resource and economic health of the fishery can initiate the limited entry process. If research by CFEC indicates limiting entry to the fishery would help solve the problem, the commission establishes a maximum number of permits for the fishery based upon historic participation levels. Next, CFEC develops a point system to rank eligible applicants according to the relative degree of hardship they would suffer if not awarded an entry permit. The basic criteria used to evaluate hardship are: 1) establishing that economic dependence upon the fishery exists (which could include determining the percentage of income derived from the fishery and amount of investment in a vessel and gear); and 2) past history of participation in the fishery, including the consistency and number of years that applicant participated. A person must have legally participated in the fishery, held the required licenses, and made at least one landing of fish during an eligible period prior to the established qualification date in order to qualify for that period. A specific application period, usually a few months in length, is established for each limited fishery. All persons who are eligible must submit their applications during that time period. CFEC is continuing to study alternative types of limited entry for fisheries managed by a harvest quota.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the economic, social, and cultural value of coastal resources is assessed in order to assist decision-making on their allocation and use. Examples may include reports on social, cultural, and economic value of the resource.


EVIDENCE:

The availability and quality of the evidence is sufficient to substantiate that the economic, social and cultural value of coastal resources are assessed in order to assist decision making on their allocation and use.

References: See citations in evidence

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)									High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)									Full Conformance
Non-conformance Number (if applicable):									--

9.2.2.8 Supporting Clause 2.6.

2.6.	States shall cooperate to support and improve coastal area management, and in accordance with capacities, measures shall be taken to establish or promote (1) systems for research and monitoring of the coastal environment, and (2) multidisciplinary research of the coastal area using physical, chemical, biological, economic, social, legal, and institutional capabilities.

Relevance: Relevant

Evaluation Parameters
Met?
Process:

There is a system that allows research and monitoring of the coastal environment, and multidisciplinary research in support of coastal area management is promoted.


EVIDENCE:

ADFG participates with federal, state and international agencies and institutions in numerous research and monitoring programs that assess physical, chemical, biological, economic and social parameters of the coastal area. One of the functions of the NPAFC is to provide a venue for coordinating the collection, exchange, and analysis of scientific data regarding anadromous fishes and other

2.6. States shall cooperate to support and improve coastal area management, and in accordance with capacities, measures shall be taken to establish or promote (1) systems for research and monitoring of the coastal environment, and (2) multidisciplinary research of the coastal area using physical, chemical, biological, economic, social, legal, and institutional capabilities.

ecologically-related species. The NPAFC's scientific research focuses on trends in marine production of salmon stocks, their population structure and diversity in marine ecosystems of the North Pacific, and impacts from climate change.

Current status/Appropriateness/Effectiveness:

Systems of monitoring and research have taken into account physical, chemical, biological, economic, social, legal, and institutional capabilities to support coastal area management.



EVIDENCE:

ADFG participates with federal, state and international agencies and institutions in numerous research and monitoring programs that assess physical, chemical, biological, economic and social parameters of the coastal area. One of the functions of the NPAFC is to provide a venue for coordinating the collection, exchange, and analysis of scientific data regarding anadromous fishes and other ecologically-related species. The NPAFC's scientific research focuses on trends in marine production of salmon stocks, their population structure and diversity in marine ecosystems of the North Pacific, and impacts from climate change.¹⁰² New genetic and otolith marking techniques developed by the member states of Canada, Japan, Korea, Russia, and the United States (including Alaska) are being used to identify the origins of salmon and intermixing of the stocks in the Pacific Ocean. In addition, new high-tech tags are being used to track the migratory behavior of salmon on the high seas.¹⁰³

The Commercial Fisheries, Sport Fish, Habitat and Subsistence Divisions of ADFG have substantial research components that monitor biological, chemical, physical, and in some cases economic and social, parameters of the coastal environment. The results of this research are published in several series of departmental scientific and technical publications that document data and results of divisional research activities and are generally available online.¹⁰⁴ These research reports also present results from research continually being done in many areas of Alaska on genetic stock identification, salmon coded-wire-tag and thermal marking, and fish pathology. Funding for ADFG research efforts is derived from state and national sources including the Alaska Sustainable Salmon Fund.¹⁰⁵ The Sport Fish Division devotes approximately one third of its funding to research activities and includes the Kachemak Bay Research Reserve, which is protected for long-term research, water-quality monitoring, education and coastal stewardship.¹⁰⁶

The Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative (AYKSSI) was established to collaboratively develop and implement a comprehensive research plan to understand causes of the decline in and recovery of AYK salmon stocks. AYKSSI has funded numerous research projects on salmon genetics, selectivity in fisheries, and escapement goals.¹⁰⁷

The coastal environment in Alaska is monitored by federal agencies including the USFS, USFWS, and NMFS as well as many institutions of higher learning including the University of Alaska Institute of Marine Science (IMS) and the Alaska Ocean Observation System. IMS faculty and research staff provides expertise in marine biology, biological oceanography, physical, chemical and geological oceanography. Current IMS projects include Northeast Pacific near-surface monitoring of temperature, salinity and fluorescence, polycyclic aromatic hydrocarbon research, and Arctic Ocean biodiversity.¹⁰⁸

Non-governmental organizations, including the Northern and Southern Southeast, Cook Inlet, Prince William Sound and Kodiak Regional Aquaculture Associations, the Nature Conservancy and others, also participate in monitoring the coastal environment in Alaska.

Evidence Basis:



¹⁰² <http://www.npafc.org/new/publications/HandBook/Handbook%203rd%20E%20English.pdf>

¹⁰³ <http://www.npafc.org/new/publications/HandBook/Handbook%203rd%20E%20English.pdf>

¹⁰⁴ http://www.adfg.alaska.gov/index.cfm?adfg=librarypublications.publications_reports#fisheries,
http://www.adfg.alaska.gov/index.cfm?adfg=librarypublications.publications_reports#subsistence,
http://www.adfg.alaska.gov/index.cfm?adfg=habitat_publications.main

¹⁰⁵ <http://www.akssf.org/>

¹⁰⁶ <http://www.adfg.alaska.gov/static/fishing/PDFs/sport/StrategicPlan2015Final.pdf>

¹⁰⁷ http://www.aykssi.org/wp-content/uploads/WEB-AYKbsfa-0210_REPORT_cmprssd.pdf

¹⁰⁸ <http://www.ims.uaf.edu/components>

2.6. States shall cooperate to support and improve coastal area management, and in accordance with capacities, measures shall be taken to establish or promote (1) systems for research and monitoring of the coastal environment, and (2) multidisciplinary research of the coastal area using physical, chemical, biological, economic, social, legal, and institutional capabilities.

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there is cooperation to support and improve coastal area management, and in accordance with capacities, measures are taken to establish or promote (1) systems for research and monitoring of the coastal environment, and (2) multidisciplinary research of the coastal area using physical, chemical, biological, economic, social, legal, and institutional capabilities. Examples may include reports on the status of the coastal area using the various aspects listed above.

EVIDENCE:

The availability and quality of the evidence is sufficient to substantiate that there is cooperation to support and improve coastal area management and measures are taken to establish or promote systems for research and monitoring and multidisciplinary research of the coastal areas.

References: See citations in evidence

Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10

Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)

High

Corresponding Conformance Level:

(10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)

Full Conformance

Non-conformance Number (if applicable):

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9.2.2.9 Supporting Clause 2.7.

2.7. In the case of a States' activities that may have an adverse environmental effect on coastal areas of other States, States shall provide timely information and if possible, prior notification to potentially affected States, and consult with those States as early as possible.

Relevance: Relevant

Evaluation Parameters

Process:

There is a system to allow early information sharing (i.e., within appropriate timeframes to avoid negative consequences) between States in case of adverse environmental effects from one State.

Met?



EVIDENCE:

Since some important watersheds for salmon in Southeast Alaska are transboundary, Alaska, U.S. federal government, Canadian federal government, British Columbia provincial ministries, and Native/First Nation organizations and governments all have an interest in planning and decision-making that affects these salmon resources. Officials from Alaska resource management agencies, including ADFG, DNR, and DEC, USGS, other public officials, and non-public agency experts have participated in British Columbia and Canadian permitting processes, most of which have focused on British Columbia mineral development projects. Transboundary watershed management issues are also addressed by The Boundary Waters Treaty and the International Joint Commission. In 2015, the state of Alaska and the BC provincial government signed a Memorandum of Understanding, which is a firm, but not legally binding, commitment to continue working together in the broad areas of continued or new activity by Alaska and British Columbia. These areas of mutual interest include establishing a bilateral working group on the protection of transboundary waters and exploring cooperative actions for natural resource development, fisheries, ocean acidification, and climate change adaptation.

Current status/Appropriateness/Effectiveness:

There are current agreements for or past records of such occurrences. Examples may include oil spills, and aquaculture farm escapes among others.



2.7. In the case of a States' activities that may have an adverse environmental effect on coastal areas of other States, States shall provide timely information and if possible, prior notification to potentially affected States, and consult with those States as early as possible.

EVIDENCE:

The Taku, Alsek, Stikine, Iskut, and Unuk River watersheds of southeast Alaska and northwest British Columbia and the Yukon River system are transboundary watersheds that support populations of Pacific salmon and fisheries on both sides of the border. From headwaters to estuaries, the watersheds provide critical habitat for the fish, wildlife, and marine life that make this region famous.

For example, since some of the important watersheds for Salmon in the Southeast are transboundary, Alaska State agencies, U.S. federal agencies, Canadian federal departments, British Columbia provincial ministries, U.S. federal agencies, Alaska State agencies, and Native/First Nation governments on each side of the border have an interest in planning and decision-making that affect it.

Officials from ADFG, DNR, DEC, USCGS, other public officials, and non-public agency experts have participated in British Columbia and Canadian permitting processes. In the past most of these review processes have focused on individual British Columbia development projects in isolation. However, AK agencies have been recently focusing cumulative effects of numerous projects across the transboundary region from the Taku in the north to the Iskut-Stikine and the Unuk in the south. There have been some venues where issues of transboundary watershed are managed: The Boundary Waters Treaty Signed in 1909, it provides the principles and mechanisms to help resolve disputes and to prevent future ones, primarily those concerning water quantity and water quality, along the boundary between Canada and the United States. The treaty provides principles for Canada and the United States to follow in using the waters they share. For example, both countries must agree to any project that would change the natural levels or flows of boundary waters. Far ahead of its time, the treaty states that waters shall not be polluted on either side of the boundary to the injury of health or property on the other side. The treaty established the International Joint Commission (IJC), with three members from each country. The ongoing work of the IJC helps to fulfill the treaty's purpose of preventing disputes as well as resolving them.

THE INTERNATIONAL JOINT COMMISSION - The International Joint Commission (IJC) is the body that oversees the implementation of the Boundary Waters Treaty. Historically, it is the body to which transboundary disputes between Canada and the United States regarding water quantity and quality are referred for recommendations. The IJC has identified transboundary watershed management as an important tool for avoiding, managing, and resolving disputes. Under its current authority, the governments of the United States and Canada could direct the IJC to establish a transboundary watershed board, with the initial task of facilitating the adoption of a watershed plan by the affected jurisdictions. The IJC could provide a neutral venue for cooperation of all stakeholders on both sides of the border under the aegis of a trusted, independent third party.

STATE OF ALASKA TRANSBOUNDARY WORKING GROUP - The State of Alaska is increasing its efforts to facilitate and promote the protection of water quality, quantity, and watershed integrity in Alaska, with special emphasis on salmon and other Alaska fish stocks. The State's efforts will address the risk of pollution from mines and other development projects in British Columbia by establishing: standard practices with the government of the Province of British Columbia for the exchange of relevant information and meaningful dialog with Alaska state agencies on projects that could discharge wastes or other potentially deleterious materials to Transboundary waters; convenient means for the Alaska public to obtain reliable information on these Transboundary projects, their discharges, water quality, habitat and fish health; and opportunities to provide input to the governments of British Columbia and Alaska on decisions relating to these projects.

In 2015, Governor Bill Walker and British Columbia Premier Christy Clark signed a Memorandum of Understanding. While the MOU is not a legally binding document, it is a firm commitment by both governments to continue working together where possible. The MOU identifies the broad areas of continued or new activity by Alaska and British Columbia, including:

- Establishing a bilateral working group on the protection of transboundary waters;
- Sharing best practices on workforce development and training;
- Advancing marine transportation reliability and safety;
- Reinforcing emergency management mutual aid response through the existing Pacific Northwest Emergency Management Arrangement;
- Fostering continued growth of existing and increased transportation links;
- Continuing joint visitor industry promotion; and
- Exploring other areas for cooperative action, including natural resource development, fisheries, ocean acidification, border management, trade and investment, and climate change adaptation.

In response to increased mining activity in Northwestern British Columbia, Canada and increasing concerns from Alaskan stakeholders, then Lieutenant Governor Byron Malott established the Transboundary Working Group to improve the State's

2.7. In the case of a States' activities that may have an adverse environmental effect on coastal areas of other States, States shall provide timely information and if possible, prior notification to potentially affected States, and consult with those States as early as possible.

involvement in activities proposed in B.C. that could impact Alaskan waters and fish. The Transboundary Working Group is composed of representatives from ADFG, DEC, DNR, Commerce and Economic Development, Labor, and the Lt. Governor's office.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that in the case of a States' activities that may have an adverse environmental effect on coastal areas of other States, the State provides timely information and if possible, prior notification to potentially affected States. Examples may include reports or data on the international cooperation in these events.



EVIDENCE:

The availability and adequacy of the evidence is sufficient to substantiate that if ADFG activities may have had an adverse environmental effect on other states that this data is readily available to the potentially affected states.

References: See citations in evidence

	Starting score	-	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
Numerical score:	10			0					10

Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)

High

Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)

Full Conformance

Non-conformance Number (if applicable):

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9.2.3 Fundamental Clause 3. Management objectives and plan

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

9.2.3.1 Supporting Clause 3.1.

3.1.	Long-term management objectives shall be translated into a plan or other management document (taking into account uncertainty and imprecision) and be subscribed to by all interested parties.		
Relevance:	Relevant		
Evaluation Parameters			Met?
Process: <i>Management objectives based on the best scientific evidence available (which can include traditional/local knowledge, if verifiable) have been translated into a fishery management plan, are in regulation, or are in another document.</i>			☒
EVIDENCE: The BOF's main role is to conserve and develop the fishery resources of the state. This involves setting seasons, bag limits, methods and means for the state's subsistence, commercial, sport, guided sport, and personal use fisheries, and it also involves setting policy and direction for the management of the state's fishery resources. The BOF is charged with making allocative decisions, and ADFG is responsible for management based on those decisions. General precepts are established by the BOF and incorporated into regulation. The long-term objectives are primarily in three policy statements incorporated into state regulation, Title 5 Alaska Administrative Code, by the BOF: 39.220 Policy for the Management of Mixed Stock Salmon Fisheries 39.222 Policy for the Management of Sustainable Salmon Fisheries 39.223 Policy for State-wide Salmon Escapement Goals			
Current status/Appropriateness/Effectiveness: <i>The objectives described by the management plan are consistent with the sustainable use of the resource, and are subscribed to by all relevant fishery stakeholders.</i>			☒
EVIDENCE: The BOF main role is to conserve and develop the fishery resources of the state. ¹⁰⁹ This involves setting seasons, bag limits, methods and means for the state's subsistence, commercial, sport, guided sport, and personal use fisheries, and it also involves setting policy and direction for the management of the state's fishery resources. The BOF is charged with making allocative decisions, and ADFG is responsible for management based on those decisions. General precepts are established by the BOF and incorporated into regulation. The long-term objectives are primarily in three policy statements incorporated into state regulation, Title 5 Alaska Administrative Code, by the BOF: 39.220 Policy for the Management of Mixed Stock Salmon Fisheries ¹¹⁰ 39.222 Policy for the Management of Sustainable Salmon Fisheries ¹¹¹ 39.223 Policy for State-wide Salmon Escapement Goals ¹¹² The basic elements of commercial fishery Management Plans are established by the BOF for each Region and incorporated into regulation in Title 5 Alaska Administrative Code ¹¹³ (Listing Regions North to South with embedded links to the pertinent plan): Ch. 3 Kotzebue Ch. 4 Norton Sound/Port Clarence			

¹⁰⁹ <http://www.adfg.alaska.gov/index.cfm?adfg=fisheriesboard.main>

¹¹⁰ <http://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/findings/ff93145x.pdf>

¹¹¹ http://www.housemajority.org/coms/jcis/pdfs/Sustainable_Salmon_Fisheries_Policy.pdf

¹¹² <http://www.touchngo.com/jgicntr/akstats/aac/title05/chapter039/section223.htm>

¹¹³

<http://www.legis.state.ak.us/basis/folioproxy.asp?url=http://www.jnu01.legis.state.ak.us/cgi-bin/folioisa.dll/aac/query=%5bjump!3A!27title5chap29!27%5d/doc/%7b@0%7d?firstthit>

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

Ch. 5 Yukon Northern
 Ch. 6 Bristol Bay
 Ch. 7 Kuskokwim
 Ch. 9 Alaska Peninsula
 Ch. 11 Atka Amlia Islands
 Ch. 12 Aleutian Islands
 Ch. 15 Chignik
 Ch. 18 Kodiak
 Ch. 21 Cook Inlet
 Ch. 24 Prince William Sound
 Ch. 30 Yakutat Area
 Ch. 33 Southeastern
 Ch. 29 Troll Fishery.

Commercial Fishery Management Plans are implemented each season in each Region for each particular salmon fishery by the responsible ADFG management area biologist located in the region. Plans are implemented at the regional, area, local level by the responsible biologist. Management Plans are also in force under state regulation for other fisheries (Subsistence Fishery, 5 AAC 01; Personal Use Fishery 5 AAC 77; Sport Fishery 5 AAC 47 – 75). AMBs are delegated authority to take management actions by the Commissioner of ADFG consistent with established plans.

While these plans primarily affect management of non-commercial fisheries, some directly involve the management of commercial fisheries, for example, the Redoubt Bay and Lake Sockeye Salmon Fisheries Management Plan (5AAC 01.760 of the subsistence finfish section) contains the allocation for all the fisheries (including the commercial fishery) as well as the trigger points for managing the commercial fishery.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that scientifically based long-term management objectives consistent with the sustainable use of the resource are translated into a plan or other management document which is subscribed to by all interested parties. Examples may include fishery management plan/framework or legal rules.


EVIDENCE:

The availability and quality of the evidence is sufficient to substantiate that scientifically based long-term management objectives consistent with the sustainable use of the resource are translated into a plan or other management document which is subscribed to by all interested parties.

References: See citations in evidence

Numerical score:	Starting score	– (Number of EPs <u>NOT</u> met x 3)			=	Overall score
	10		0			10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)						High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)						Full Conformance
Non-conformance Number (if applicable):						

9.2.3.2 Supporting Clause 3.1.1.

3.1.1.	There shall be management objectives seeking to ensure that ETP species are protected from adverse impacts resulting from interactions with the unit of certification and any fisheries enhancement activity, including recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible.
Relevance:	Relevant.
Evaluation Parameters	Met?
Process: <i>There is a process that allows for setting specific management objectives in fishery management plans or other relevant regulation (or other appropriate frameworks) for the protection of ETP species.</i>	☑
EVIDENCE: In general, within the Alaskan fishery management system, there are processes for setting specific management objectives for the protection of ETP species. ADFG is responsible for determining and maintaining a list of endangered species in Alaska under AS 16.20.190. A species or subspecies of fish or wildlife is considered endangered when the Commissioner of ADFG determines that its numbers have decreased to such an extent as to indicate that its continued existence is threatened. By law, the Commissioners of the Alaska Departments of Fish and Game and Natural Resources must take measures to preserve the natural habitat of fish and wildlife species that are recognized as threatened with extinction. The State Endangered Species List currently includes two birds (Short-tailed Albatross and Eskimo Curlew) and three marine mammals (blue whale, humpback whale, and right whale). Interaction of these ETP species on the salmon fisheries is very low based on logbook reports of ETP species take, and several years of sampling in test fisheries. Indirect effects of the Southeast Alaska and Yakutat fisheries include harvest of non-local Chinook salmon stocks which reduces food availability for ESA-listed Southern Resident Killer Whales. NMFS (2018), in their most recent consultation on the delegation of management authority for specified salmon fisheries to the State of Alaska, has determined that combined commercial and sport fisheries in Southeast Alaska affect Southern Resident Killer Whales by harvest of Chinook Salmon upon which they feed. However, NMFS (2021) determined that this impact does not jeopardize the continued existence of this species. There are no salmon stocks designated as endangered in the state of Alaska. However, the southeast troll fishery is estimated to take a small number of Washington and Oregon Chinook salmon stocks listed as threatened under the U. S. Endangered Species Act. Those takes are regulated under the PST. Under the treaty, an annual quota of Chinook salmon is set for the Alaska fishery which is designed to conserve all wild stocks of Chinook salmon. The management of the troll fishery (through in season opening and closure of the fishery) is governed by that annual quota. The harvest of different stocks each year is estimated from the recovery rates of coded wire tags implanted in representative index stocks in the region of the threatened or endangered stocks. Small numbers of sockeye from the Fraser River listed under the Canadian Species at Risk Act are also harvested by southeast Alaska commercial purse seine and gillnet fisheries. These harvests are regulated by the Pacific Salmon Treaty.	
Current status/Appropriateness/Effectiveness: <i>There are clear objectives in management plans or other relevant regulations (or other appropriate frameworks) seeking to ensure that ETP species are protected from adverse impacts resulting from interactions with the unit of certification and fishery enhancement activity, including recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible. Such objectives may be outlined in overarching fisheries legislation, regulations, or management plans.</i>	☑
EVIDENCE: As outlined above, and again in detail in clause 3.2.4, some marine species receive special consideration through the state Endangered Species program and authorities can also use the Act to preserve natural habitat of species or subspecies of fish and wildlife that are threatened with extinction.	
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are management objectives seeking to ensure that endangered species are protected from adverse impacts resulting from interactions with the unit of certification and any associated culture or enhancement activity, including recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible. Examples may include fishery management plans/framework or legal rules.</i>	☑

3.1.1. There shall be management objectives seeking to ensure that ETP species are protected from adverse impacts resulting from interactions with the unit of certification and any fisheries enhancement activity, including recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible.

EVIDENCE:

The State Endangered Species List provides evidence of the availability, quality, and/or adequacy of evidence.

References: See citations in evidence

Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10

Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)

High

Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)

Full Conformance

Non-conformance Number (if applicable):

9.2.3.3 Supporting Clause 3.1.2.

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

Relevance: Relevant.

Evaluation Parameters

Met?

Process:

There is a mechanism in place by which the essential habitat of the stock under consideration and the potential impacts of the fishery (i.e., employing bottom contact gear) upon them are identified. This or a similar mechanism shall also be in place to identify habitats, which are highly vulnerable to fishery activities by the unit of certification. The information provided by these mechanisms shall be used to produce specific management objectives seeking to avoid significant negative impacts on habitats. When identifying highly vulnerable habitats, their value to ETP species shall be also considered, with habitats essential to ETP species being categorized accordingly. Note that this clause shall consider Alaska-specific designation of important and essential fish habitats categorized as such at the state and federal level. Such objectives may be outlines in overarching fisheries legislation, regulations, or management plans.



EVIDENCE:

Conservation of the biodiversity of aquatic habitats and ecosystems is the responsibility of Habitat Division of ADFG. Activities by individuals, companies, or agencies within streams used by anadromous fish require permission of this division, which oversees activities in refuges, critical habitat, and sanctuaries. The Division also coordinates with other agencies in reviewing plans for forestry, mining, oil and gas development and coastal management. A catalogue of anadromous fish streams is maintained by ADFG.

Current status/Appropriateness/Effectiveness:

There is evidence that the objectives described above are in place, and that effective management measures relative to those have been implemented.



EVIDENCE:

Conservation of the biodiversity of aquatic habitats and ecosystems is the responsibility of Habitat Division within ADFG (AS 16.05.871, AS 16.05.841).¹¹⁴ Activities by individuals, private companies, or agencies within streams used by anadromous fish require permission of the ADFG. The Division oversees activities in refuges, critical habitat, and sanctuaries. It coordinates with other agencies in reviewing plans for forestry, mining, oil and gas development and coastal management. The Habitat Section of ADFG

¹¹⁴ <http://www.adfg.alaska.gov/index.cfm?adfg=divisions.haboverview>

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

maintains and updates the anadromous stream catalogue which lists all waters used by salmon for spawning, rearing, and travel. Anadromous streams receive increased protection from development.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are management objectives seeking to avoid, minimize, or mitigate impacts of the unit of certification on the stock under consideration's essential habitats and on habitats that are highly vulnerable to damage by the unit of certification's fishing gear. Examples may include various regulations, fishery management plans, data, and reports.



EVIDENCE:

The availability and adequacy of evidence is sufficient to substantiate that there are management objectives seeking to avoid, minimize or mitigate impacts of the unit of certification on the stock under consideration's essential habitats and on habitats vulnerable to damage by the unit of certification's fishing gear.

References: See citations in evidence

Numerical score:	Starting score		Number of EPs <u>NOT</u> met							Overall score
	10	–	(	0	)	x	3	=	10	
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)										High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)										Full Conformance
Non-conformance Number (if applicable):										--

9.2.3.4 Supporting Clause 3.1.3.

3.1.3. There shall be management objectives seeking to minimize adverse impacts of the unit of certification (including any fishery enhancement) on the structure, and function of the ecosystems that are likely to be irreversible or very slowly reversible.

Relevance: Relevant

Evaluation Parameters

Met?

Process:

There is a process in place by which adverse impacts of the fishery (including any fishery enhancement) on the structure, and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible are identified. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored. This process results in setting relative management objectives. Management priority shall be focused primarily towards minimizing and avoiding identified impacts.



EVIDENCE:

There are existing regulatory policies, such as the Policy for the Management of Mixed Stock Salmon Fisheries (5 AAC 39.220) and the Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222) describing a number of key requirements with respect to wild fisheries, including salmon habitat conservation and management of enhancement activities. Salmon enhancement and hatchery activities in Alaska are also governed by statutes (AS 16.10.420, 430, 440, 445, and 455) and regulations (5 AAC 40.005, 41.005, 030, 050, 060, and 080), designed to protect wild salmon stocks.

Current status/Appropriateness/Effectiveness:

There are management measures in place to achieve the objectives described in the process parameter. Such objectives may be outlines in overarching fisheries legislation, regulations, or management plans.



EVIDENCE:

3.1.3. There shall be management objectives seeking to minimize adverse impacts of the unit of certification (including any fishery enhancement) on the structure, and function of the ecosystems that are likely to be irreversible or very slowly reversible.

Article 2, 5AAC 39.220, Policy for the management of mixed stock salmon fisheries,¹¹⁵ requires that “a) ... conservation of wild salmon stocks consistent with sustained yield shall be accorded the highest priority. 5AAC 39.222, Policy for the management of sustainable salmon fisheries,¹¹⁶ also describes a number of key requirements with respect to wild fisheries, these include: In formulating fishery management plans designed to achieve maximal or optimum salmon production, the board and department must consider factors including environmental change, habitat loss or degradation, data uncertainty, limited funding for research and management programs, existing harvest patterns, and the fisheries or expanding fisheries.

Wild salmon stocks and the salmon's habitats should be maintained at levels of resource productivity that assure sustained yields as follows: 1) Salmon spawning, rearing, and migratory habitats should be protected as follows: i) Salmon habitats should not be perturbed beyond natural boundaries of variation; ii) Scientific assessments of possible adverse ecological effects of proposed habitat alterations and impacts of the alterations on salmon populations should be conducted before approval of a proposal; iii) All essential salmon habitat in marine, estuarine, and fresh water ecosystems and access of salmon to these habitats should be protected iv) Salmon stocks should be protected within spawning, incubating, rearing and migratory habitats. With respect to enhanced fisheries, these include: Effects and interactions of introduced or enhanced salmon stocks on wild salmon stocks should be assessed; Wild salmon stocks and fisheries on those stocks should be protected from adverse impacts from artificial propagation and enhancement efforts. Depleted salmon stocks should be allowed to recover or, where appropriate, should be actively restored; diversity should be maintained to the maximum extent possible, at the genetic, population, species, and ecosystem levels. The policy specifically identifies implementation of a precautionary approach for maintaining wild salmon populations.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are management objectives seeking to minimize adverse impacts of the fishery (including any enhancement activities) on the structure, processes, and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible. Examples may include fishery management plans, other regulatory documents, or laws.



EVIDENCE:

The availability and quality of the evidence is sufficient to substantiate that there are management objectives seeking to minimize adverse impacts of the fishery on the structure, processes and function of aquatic ecosystems that likely to be irreversible or very slowly reversible.

References: See citations in evidence

Numerical score:	Starting score		Number of EPs <u>NOT</u> met					Overall score	
	10	-	(	0	x	3	)	=	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)									High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)									Full Conformance
Non-conformance Number (if applicable):									

¹¹⁵ <http://www.touchngo.com/lglcntr/akstats/aac/title05/chapter039/section220.htm>

¹¹⁶ http://www.housemajority.org/coms/jcis/pdfs/Sustainable_Salmon_Fisheries_Policy.pdf

9.2.3.5 Supporting Clause 3.2.

Management measures shall provide, inter alia, that:

9.2.3.6 Supporting Clause 3.2.1.

3.2.1 Excess fishing capacity shall be avoided and exploitation of the stocks shall remain economically viable.	
Relevance:	Relevant
Evaluation Parameters	
Process: <i>There are management measures in place to limit and/or reduce the total fishing capacity of the unit of certification. These measures shall include specific fishing capacity objective(s), which themselves are based on the best scientific evidence available to understand the level of fishing pressure appropriate to ensure the long-term sustainability of the fishery. Please note that assessors should ensure that catches are within limits, and that data from enforcement show an adequate level of compliance with fisheries laws and regulation.</i>	☒
EVIDENCE: Alaska adopted a limited entry salmon fishery in 1973 to regulate fishing capacity and improve its ability to sustainably manage its salmon fisheries. The Alaska CFEC is the agency charged with conserving and maintaining the economic health of Alaska's commercial fisheries by limiting the number of participating fishers. Entry into each regional salmon fishery is limited to permitted harvesters, and the number of permits is regulated taking into account economic viability of each fishery. Implementation of the Limited Entry Act protected Alaska's fisheries from an influx of new fishermen from West Coast fisheries where fishing opportunities have been severely reduced by court decisions and stock conditions. Net economic benefits have accrued that may not have existed under open access. Most Alaska salmon fisheries have restrictive management measures to ensure that escapement goals are met, etc. These measures are needed not only because run strength varies from year to year, but also because, in at least some areas, there is enough fishing capacity to effectively harvest most salmon entering a fishing district. Restrictive measures can be put in place prior to the fishing season through regulatory management plans that limit harvest, restrict fishing power (vessel size, amount and type of fishing gear), etc., as well during the season through fishery managers' authority to set fishing periods, open and close fishing sections, etc. Also, there has been at least one instance in which permits have been reduced through a buy-back program (e.g. a purse seine fishery in Southeast Alaska).	
Current status/Appropriateness/Effectiveness: <i>The fishing capacity of the unit of certification is at or below the level of the specific fishing capacity objective(s).</i>	☒
EVIDENCE: Alaska has succeeded in sustainable yield management of its salmon fisheries since the enclosure of the salmon fishery in 1973 under a limited entry permit system.¹¹⁷ The Alaskan legislature adopted the Limited Entry Act, establishing the current limited entry system for the salmon fisheries. To that end, no commercial fisherman may operate in the salmon fishery without first obtaining an entry permit. Entry permits entitle the permit holder to fish in a specified fishery using a specific type of gear. Permit holders may transfer their entry permits, provided they adhere to statutory and regulatory guidelines. The Commercial Fisheries Entry Commission (CFEC)¹¹⁸ administers the commercial fishery entry permit system. The objective of the CFEC is to limit entry into commercial fisheries and provide annual licensing and permitting of fisheries to facilitate the management and development of fishery resources for maximum benefit of those dependent upon them and the economy of the state. Some key features of the program are to prohibit permit leasing, prevent the use of permits as collateral for loans, and allow for free transferability. The Limited Entry law also defined entry permits as a use-privilege that can be modified by the legislature without compensation. Free transferability has resulted in maintaining high percentages of residents within Alaska's fisheries and has been upheld by Alaska's Supreme Court. They are a property right of the holder and may be sold, bought and are heritable. The CFEC initially issues the permits on the basis of a detailed point system designed to gauge the hardship an applicant would suffer if denied a permit. This	

¹¹⁷ <http://www.cfec.state.ak.us/pregs/Homan30YrsLimitedEntrySummary.pdf>

¹¹⁸ <http://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=1288&context=alr>

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

point system ranks applicants by weighing such factors as past participation in the fishery, degree of economic dependence on the fishery, access to alternative employment, and investment in vessels and gear. Once issued, limited entry fishing permits must be renewed annually, and failure to renew a permit for a period of two years results in forfeiture. Moreover, the Alaska Legislature has specifically reserved the right to modify or revoke a limited entry permit without providing compensation.

The limited entry permit system has been beneficial to Alaska's fisheries in several ways. Implementation of the Limited Entry Act protected Alaska's fisheries from an influx of new fishermen from West Coast fisheries where fishing opportunities have been severely reduced by court decisions and stock conditions. Net economic benefits have accrued that may not have existed under open access.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that excess fishing capacity is avoided and exploitation of the stocks remains economically viable. Examples may include fishery reports on harvest recommendation or fleet reports.


EVIDENCE:

The availability and adequacy of the evidence is sufficient to substantiate that excess fishing capacity is avoided and exploitation of the stocks remain economically viable.

References: See citations in evidence

Numerical score:	Starting score	Number of EPs <u>NOT</u> met				Overall score
	10	-	(	0	x 3)	= 10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)						High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)						Full Conformance
Non-conformance Number (if applicable):						

9.2.3.7 Supporting Clause 3.2.2.
3.2.2. The economic conditions under which fishing industries operate shall promote responsible fisheries.

Relevance: Relevant

Evaluation Parameters
Met?
Process:

There are management measures in place to limit and/or reduce the total fishing capacity of the unit of certification. These measures shall include specific fishing capacity objective(s), which themselves are based on the best scientific evidence available to understand the level of fishing pressure appropriate to ensure the long-term sustainability of the fishery. Please note that assessors should ensure that catches are within limits, and that data from enforcement show an adequate level of compliance with fisheries laws and regulation.


EVIDENCE:

The limited entry permitting process of the CFEC and the separation of allocative and conservation responsibilities between the BOF and ADFG promote responsible fisheries. Limited entry permit holders tend to support sustainable fishery management, since the continued value of their permits depend upon healthy fisheries as well as market forces. The BOF considers economic efficiency and resource conservation when it makes decisions on regulatory proposals.

Most Alaska salmon fisheries have restrictive management measures to ensure that escapement goals are met, etc. These measures are needed not only because run strength varies from year to year, but also because, in at least some areas, there is enough fishing capacity to effectively harvest most salmon entering a fishing district. Restrictive measures can be put in place prior to the fishing season through regulatory management plans that limit harvest, restrict fishing power (vessel size, amount and type of fishing gear), etc., as well during the season through fishery managers' authority to set fishing periods, open and close fishing sections, etc. Also,

3.2.2.	The economic conditions under which fishing industries operate shall promote responsible fisheries.		
there has been at least one instance in which permits have been reduced through a buy-back program (e.g. a purse seine fishery in Southeast Alaska).			
Current status/Appropriateness/Effectiveness: <i>The fishing capacity of the unit of certification is at or below the level of the specific fishing capacity objective(s).</i>			☒
EVIDENCE: The limited entry permitting process of the CFEC and the separation of allocative and conservation responsibilities of the BOF and ADFG promote responsible fisheries. The BOF process does support reviews of proposals to alter fisheries management plans so as to improve the economic efficiency and is designed in a manner that conserves the biological resource.			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that excess fishing capacity is avoided and exploitation of the stocks remains economically viable. Examples may include fishery reports on harvest recommendation or fleet reports.</i>			☒
EVIDENCE: The availability and quality of the evidence is sufficient to substantiate the excess fishing capacity is avoided and exploitation of the stocks remain economically viable.			
References:	See citations in evidence		
Numerical score:	Starting score	– (Number of EPs <u>NOT</u> met x 3)	= Overall score
	10	0	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Full Conformance
Non-conformance Number (if applicable):			

9.2.3.8 Supporting Clause 3.2.3.

3.2.3.	The interests of fishers, including those engaged in subsistence, small-scale, and artisanal fisheries shall be taken into account.		
Relevance:	Relevant.		
Evaluation Parameters			
Process: <i>There is a system or process in place that identifies the interests of small-scale fishers, either through stakeholder engagement or social research, in a way, which permits the utilization of the information during the management measure development process.</i>			☒
EVIDENCE: The interests of all harvesters are protected through the BOF process as well as various laws and regulation. The BOF receives recommendations from local Advisory Committees in communities around Alaska. The BOF considers recommendations provided by these committees but is not legally obligated to accept them. BOF meetings are well publicized and open to the public. A significant amount of time during each meeting is set aside for public comment, which largely comes from individuals and groups engaged in fishing. Both the state (AS 16.05.258) and federal (Title VIII of Alaska National Interest Lands Conservation Act) governments recognize a priority for subsistence uses, which are given preference over other uses in the management of fisheries.			
Current status/Appropriateness/Effectiveness: <i>There is evidence that the interests of small-scale fishers are effectively taken into account during the development of management measures, and there is no evidence that small-scale fisheries are adversely impacted by any management measures currently in place.</i>			☒

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

The interests of all harvesters are protected through the BOF process.¹¹⁹ The BOF receives recommendations from 82 local Advisory Committees in communities around Alaska. They develop regulation proposals, evaluate proposals, debate conservation, advise regional councils and consult with interested parties.

Subsistence uses are given preference in law over other uses in fishery management (AS 16.05.258).¹²⁰ On all Federal public lands and waters management of subsistence fisheries is the responsibility of the Federal Government, which ensures that preference is given to subsistence users.¹²¹ In 'non subsistence areas' of Alaska 'personal use' fisheries provide harvest opportunities other than by sport fishing methods (rod & reel). The Subsistence Division of ADFG supports the interests of subsistence harvesters.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the interests of fishers, including those engaged in subsistence, small-scale, and artisanal fisheries are taken into account. Examples may include dedicated quotas, public meeting records, laws, and regulations.


EVIDENCE:

The availability and adequacy of the evidence is sufficient to substantiate that the interests of commercial, sport, subsistence and personal use fishers are taken into account.

References: See citations in evidence

	Starting score		Number of EPs <u>NOT</u> met				Overall score
Numerical score:	10	-	0	x	3	) =	10

Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)

High

Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)

Full Conformance

Non-conformance Number (if applicable):

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9.2.3.9 Supporting Clause 3.2.4.
3.2.4. Biodiversity of aquatic ecosystems shall be conserved and ETP species shall be protected. Where relevant, there shall be management objectives, and as necessary, management measures.

Relevance: Relevant

Evaluation Parameters

Met?

Process:

There are management measures in place specifically designed to ensure that the biodiversity of aquatic ecosystems are conserved and ETP species are protected. This shall reflect the existence of specific management objectives and measures, which are based on the best scientific evidence available.


EVIDENCE:

Conservation of the biodiversity of aquatic habitats and ecosystems is the responsibility of ADFG's Habitat Division (AS 16.05.871, AS 16.05.841). It issues permits for activities within streams used by anadromous fish; oversees activities in refuges, critical habitat, and sanctuaries; and coordinates with other agencies in reviewing plans for forestry, mining, oil and gas development and coastal management. ADFG is responsible for determining and maintaining a list of endangered species in Alaska (AS 16.20.190). A species or subspecies of fish or wildlife is considered endangered when the ADFG Commissioner determines its numbers have decreased to

¹¹⁹ <http://www.adfg.alaska.gov/index.cfm?adfg=process.acoverview>

¹²⁰ <http://www.touchngo.com/glcnt/akstats/statutes/title16/chapter05/section258.htm>

¹²¹ <https://www.doi.gov/sites/doi.gov/files/uploads/Subsistence%20Management%20Program%20Brochure%202016.pdf>

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

such an extent that its continued existence is threatened. By law, the Commissioners of the Alaska Departments of Fish and Game and Natural Resources must take measures to preserve the natural habitat of fish and wildlife species that are recognized as threatened with extinction. Currently there are no salmon stocks designated as endangered in the state of Alaska. The Policy for the Management of Sustainable Salmon Fisheries (SSFP; 5 AAC 39.222, effective 2000, amended 2001) directs ADFG to provide the BOF with reports on salmon stock status and identify any stock that is of yield, management, or conservation concern. In consultation with ADFG, the BOF may designate, amend, or discontinue a “stock of concern”.

Current status/Appropriateness/Effectiveness:

The management measures currently in place have been successful in meeting the management objectives. Such objectives may be outlines in overarching fisheries legislation, regulations, or management plans. There is no evidence that the fishery is currently having a significant adverse impact on aquatic ecosystems, and it is not putting any ETP species at risk of extinction.



EVIDENCE:

Conservation of the biodiversity of aquatic habitats and ecosystems is the responsibility of Habitat Division within ADFG (AS 16.05.871, AS 16.05.841.).¹²² Activities by individuals, private companies, or agencies within streams used by anadromous fish require permission of the ADFG. The Division oversees activities in refuges, critical habitat, and sanctuaries. It coordinates with other agencies in reviewing plans for forestry, mining, oil and gas development and coastal management. The Habitat Section of ADFG maintains and updates the anadromous stream catalogue, which lists all waters used by salmon for spawning, rearing, and travel. Anadromous streams receive increased protection from development. The Commercial Fisheries Division maintains a Gene Conservation Laboratory,¹²³ which advises the Division Director in enforcing the Finfish Genetics Policy, which has as its purpose protection of the genetic diversity of salmon and other fish. The Laboratory reviews and recommends actions on applications for Hatchery Operating Permits, Fish Resource Permits which are required for any collection of fish, shellfish, or plants (e.g. for scientific research), and for Fish Transport Permits which are required for transportation, possession, or release of live fish (e.g. by a hatchery/for research).

The Commercial Fisheries Division maintains a Fish Pathology Laboratory that has an important role in ecosystem conservation.¹²⁴ It “monitors and controls finfish and shellfish diseases...conducting diagnostic surveys, developing...policies...on fish disease issues. It also reviews and recommends actions on applications for Fish Resource Permits or Fish Transport Permits. The Laboratory has responsibility for policies designed to protect habitats and ecosystems from the introduction or amplification of fish pathogens. The Commercial Fisheries Division maintains a Mark Tag and Age Laboratory¹²⁵ to provide fisheries managers and researchers with timely, current, and historical biological data to help them manage, preserve, protect, and perpetuate Alaska’s fishery resources The Laboratory’s role in ecosystem conservation is important in that it enables harvest managers to know the portion of wild salmon in mixed harvests with hatchery-produced salmon and thus enables accomplishment of policies for mixed stock fisheries, sustainable fisheries, and escapement goal setting.

The Policy for the Management of Sustainable Salmon Fisheries¹²⁶ (SSFP; 5 AAC 39.222, effective 2000, amended 2001) directs ADFG to provide the BOF with reports on the status of salmon stocks and identify any stock that present a concern. In consultation with ADFG, the BOF may designate, amend, or discontinue Stocks of Concern based on stock status reports and recommendations from ADFG. The SSFP defines three levels of concern (Yield, Management, and Conservation) with yield being the lowest level of concern and conservation the highest level of concern. For example, Stocks of Concern (SOCs) are designated if: 1) A stock is not consistently meeting harvest levels even though escapement levels are met (Yield concern), or 2) When escapement levels have not been met within the past 3 of 5 years (Management Concern). 3) When there is a chronic inability, despite the use of specific management measures, to maintain escapements for a stock above a sustained escapement threshold (SET) (Conservation Concern); The SOC

¹²² <http://www.adfg.alaska.gov/index.cfm?adfg=divisions.haboverview>

¹²³ <http://www.adfg.alaska.gov/index.cfm?adfg=fishinggeneconservationlab.main>

¹²⁴ <http://www.adfg.alaska.gov/index.cfm?adfg=fishingpathologylab.main>

¹²⁵ <http://mtalab.adfg.alaska.gov>

¹²⁶ <http://www.adfg.alaska.gov/index.cfm?adfg=specialstatus.akfishstocks>

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

designation triggers a written action plan to identify factors of decline and develop a plan to increase abundance and harvests. The BOF requires action plans for stocks of concern.¹²⁷

ADFG is responsible for determining and maintaining a list of endangered species in Alaska under AS 16.20.190. A species or subspecies of fish or wildlife is considered endangered when the Commissioner of ADFG determines that its numbers have decreased to such an extent as to indicate that its continued existence is threatened.¹²⁸ By law, the Commissioners of the Alaska Departments of Fish and Game and Natural Resources must take measures to preserve the natural habitat of fish and wildlife species that are recognized as threatened with extinction. The State Endangered Species List currently includes two birds (Short-tailed Albatross and Eskimo Curlew) and three marine mammals (blue whale, humpback whale, and right whale). Interaction of these ETP species on the salmon fisheries is very low based on logbook reports of ETP species take, and several years of sampling in test fish.

There are no salmon stocks designated as endangered in the state of Alaska. However, the southeast troll fishery is estimated to take a small number of Chinook salmon belonging to threatened or endangered stocks from Washington and Oregon states. For example, the upper Willamette River Chinook are threatened. Those takes are regulated under the PST¹²⁹ Under the treaty an annual quota of Chinook salmon is set for the Alaska fishery, a quota designed to conserve all wild stocks of Chinook salmon. The management of the troll fishery (through in season opening and closure of the fishery) is governed by that annual quota. The harvest of different stocks each year is estimated from the recovery rates of coded wire tags implanted in representative index stocks in the region of the threatened or endangered stocks.¹³⁰

Evidence Basis:

Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that biodiversity of aquatic ecosystems is conserved and ETP species are protected. Where relevant, there are management objectives, and as necessary, management measures. Examples may include laws and regulations, fisheries management plans, and species status reports.


EVIDENCE:

The availability and adequacy of the evidence is sufficient to substantiate that biodiversity of aquatic ecosystems is conserved and ETP species are protected.

References:	See citations in evidence				
Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	) x 3 = Overall score
	10			0	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)					High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)					Full Conformance
Non-conformance Number (if applicable):					--

¹²⁷ Alaska has identified no stocks of conservation concern.

¹²⁸ <http://www.adfg.alaska.gov/index.cfm?adfg=specialstatus.akendangered>

¹²⁹ <http://www.psc.org>

¹³⁰ http://www.psc.org/info_codedwiretagreview.htm, <http://www.adfg.alaska.gov/index.cfm?adfg=fishregulations.commercial>

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

9.3.1 Fundamental Clause 4. Fishery data

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

9.3.1.1 Supporting Clause 4.1.

4.1.	All significant fishery removals and mortality of the target species (shall be considered by management. Specifically, reliable and accurate data required for assessing the status of fishery(ies) and ecosystems—including data on retained catch, bycatch, discards, and waste—shall be collected. Data can include relevant traditional, fisher, or community knowledge, provided their validity can be objectively verified. These data shall be collected, at an appropriate time and level of aggregation, by relevant management organizations connected with the fishery, and provided to relevant States regional, and international fisheries organizations.		
Relevance:	Relevant		
Evaluation Parameters			Met?
Process: <i>There is a process or system that allows for effective data collection (including data on retained catch, bycatch, discards and waste) on the status of fisheries and ecosystems for management purposes. In the case of stocks fished by more than one State, this includes a system or agreement with other States to ensure mortality and removals data are available for the entirety of the biological stock. Some fisheries and/or fish stock are hard to monitor for various reasons, including remoteness of operation/distribution and complexity of fishing operations—posing particular challenges with the collection and maintenance of adequate, reliable, and current data and/or other information. Assessors shall acknowledge and explain these challenges, data collection, and maintenance to cover all stages of fishery development in accordance with applicable international standards and practices. For salmon, the assessors shall describe and present the enumeration methods (i.e., peak aerial survey, feet survey, weir count, tower, mark–recapture, sonar, etc.) utilized for all the major stocks managed by formal escapement goal in Alaska. Such summary data can be found in the annually released ADF&G document Summary of Pacific salmon escapement goals in Alaska with a review of escapements from [year] to [year]. The document generally reviews the latest 9–10 years of salmon escapements, enumeration, goal development methods, and the relative escapement goal performance.</i>			☒
EVIDENCE: To facilitate stock-specific management, state waters have been classified and numbered into regions, areas, districts, sub-districts, individual river systems and sections within rivers when needed ¹³¹ . A record of sale for each commercial landing (fish ticket) provides the location, time, species, number, weight and value of fish caught. In-season, area office staff compile summaries of the catch and effort from these fish tickets. The Division of Commercial Fisheries Computer Services section maintains a database and archives the fish ticket data. Historically, the area office staff edited and entered the data from these paper fish tickets. Currently, the state is deploying an electronic fish ticket system. The first buyer of raw fish, persons who catch and process fish, and persons who catch and have fish processed by another business are required to file an annual report of their purchasing and processing activities. This report is called the Commercial Operator's Annual Report (COAR) and is due by April 1 of the following year. There are process in place to share catch data (and accompany data such as code microwire tag recoveries) with both Canada and the states of Oregon, Washington, California and Idaho where some stocks harvested in Alaska spawn. There is also a process for sharing catch and enhancement data with selected Pacific rim countries through the North Pacific Anadromous Fish Commission (NPAFC). As deemed necessary, specialized services devoted to identifying the stock composition of catches by coded microwire tags, genetic analysis, otoliths or scale patterns is conducted in-season or post season and provided to managers. Distribution of stock assessment information takes many forms, beginning with real-time summaries being hand delivered to managers as necessary,			

¹³¹ <http://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmonmaps>.

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

being entered into databases for rapid access, in-season memoranda's being distributed to area, regional and headquarters staff to final reports being accessible on-line¹³². The fine scale geographic definitions of Regions/Districts/Subdistricts/steams are highly appropriate for stock specific management because it allows definition of biological stocks and appropriate places where these stocks can be fished (and records of catch maintained) in as fine a scale as is practical. Data sharing with other Canada, Washington, Oregon and Idaho is through the Pacific Salmon Commission and Pacific Sates Marine Fisheries Commission. The process and systems described above are diligently maintained and used to make both in-season management decisions and to evaluate those decisions post-season

Current status/Appropriateness/Effectiveness:

There are appropriate and reliable data collection and estimation methods. Reliable and accurate data are collected on retained catch, bycatch, discards, and waste (for targeted and non-targeted fisheries), and the direct and indirect impacts of the fishery on the ecosystem. Such information is disseminated to all relevant fishery management authorities. Overall, the data collection system is considered effective for the purposes of this clause if fishery scientists believe there is a high probability that the total estimated mortality is an accurate reflection of the actual total mortality across the entire biological stock. Fishery data are collected with a frequency and level of aggregation, which allows the effective and informed management of the stock,. The appropriate level of aggregation will often be the stock level, but could also reflect specific habitats, gear types, sub-populations, etc. The requirements for data collection are focused on the need to assess the effects of the unit of certification on non-target stocks. Non-target catches and discards refer to species/stocks that are taken by the unit of certification other than the stock for which certification is being sought. The adequacy of data relates primarily to the quantity and type of data collected (including sampling coverage) and depends crucially on the nature of the systems being monitored and purposes to which the data are being put. Some analysis of the precision resulting from sampling coverage would normally be part of an assessment of adequacy and reliability. The currency of data is important, inter alia, because its capacity for supporting reliable assessment of current status and trends declines as it gets older.



EVIDENCE:

Both in-season and historic commercial catch data are readily available on the Commercial Fisheries Division website (http://www.cf.adfg.state.ak.us/geninfo_/finfish/salmon/salmcatch.php). Catch and effort data is also available in annual management reports for each area (see for example Midleton and Russell (2024)). For sport fisheries, state-wide estimates of harvest are administered by the Research and Technical Services Section (Smith et al. 2024). Sport fishery harvest and fishing effort estimates obtained from the state-wide harvest survey are available on the Sport Fish website <http://www.sf.adfg.state.ak.us/statewide/FishingSurvey/>. Examples of sharing catch, effort and stock composition data with Canada for transboundary rivers in Southeast Alaska is PSC-TCTR (2022) and for coastwide Chinook Salmon stock status is PSC-JTCC (2023). An example of sharing catch data through the NPAFC is NPAFC (2022).

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that all significant fishery removals and mortality of the target species are considered by the fishery management organizations. Specifically, reliable and accurate data required for assessing the status of fishery/ies and ecosystems—including data on retained catch, bycatch, discards, and waste—are collected. Data can include relevant traditional, fisher, or community knowledge, provided their validity can objectively be verified (i.e., the knowledge has been collected and analyzed though a systematic, objective, and well-designed process, and is not just hearsay). Examples may include stock assessment reports, catch data, and observer data.



EVIDENCE:

¹³² <http://www.adfg.alaska.gov/index.cfm?adfg=library.main>

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

The fish ticket system is the primary basis for collecting commercial catch data. The system is rigorous and strictly enforced. Data are quickly compiled through either electronic reporting or paper records. These data are entered into electronic databases as soon as local logistic permits. In-season data also made available to the public via ADFG web site. In some cases, estimates for the sport fish catch and subsistence catch are made in-season to facilitate management. Post season final estimates are posed on searchable database available for public use and in written reports (see for example Middleton and Russell (2024)). In the Southeast Region estimates are also made for the incidental mortality for Chinook Salmon in the commercial and sport fisheries (PSC JTCC 2023).

References:

Middleton, W. S., and C. W. Russell. 2024. North Alaska Peninsula commercial salmon annual management report, 2023. Alaska Department of Fish and Game, Fishery Management Report No. 24-13, Anchorage. <https://www.adfg.alaska.gov/FedAidPDFs/FMR24-13.pdf>

NPAFC. 2022 Annual Report for 2022. NPAFC Suite 502. West Pender St, Vancouver, B.C. VC 3B2 Canada. <https://npafc.org>

PSC-JTCC. 2023. Annual report of catch and escapement for 2022. TCCHINOOK (23)-02 Pacific Salmon Commission., Vancouver, B.C. Canada. <https://www.psc.org/publications/technical-reports/technical-committee-reports/chinook/>

PSC-TCTR. 2022. Final estimates of Transboundary River salmon production, harvest and escapement and a review of joint enhancement activities in 2019. Report TCTR (22)-01 PSC. Vancouver, B.C. Canada. <https://www.psc.org/publications/technical-reports/technical-committee-reports/transboundary/>

Smith, N. J., S. Restrepo, I. Rafferty, and J. Bozzini. 2024. Alaska statewide sport fish harvest survey, 2024. Alaska Department of Fish and Game, Division of Sport Fish, Regional Operational Plan No. ROP.SF.4A.2024.02, Anchorage. <https://www.adfg.alaska.gov/FedAidPDFs/ROP.SF.4A.2024.02.pdf>

Numerical score:	Starting score	Number of EPs <u>NOT</u> met				Overall score	
	10	-	(	0	x 3	) =	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)							High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)							Full Conformance
Non-conformance Number (if applicable):							

9.3.1.2 Supporting Clause 4.1.1.

4.1.1.	Timely, complete, and reliable statistics shall be compiled on catch and fishing effort and maintained in accordance with applicable international standards and practices, and in sufficient detail to allow sound statistical analysis for stock assessment. Such data shall be updated regularly and verified through an appropriate system. The use of research results as a basis for setting management objectives, reference points, and performance criteria, as well as for ensuring adequate linkage between applied research and fisheries management (e.g., adoption of scientific advice) shall be promoted. Results of analysis shall be distributed accordingly as a contribution to fisheries conservation, management, and development.
Relevance:	Relevant
Evaluation Parameters	
Process:	Met?
<i>There is a process or system that allows for the production, maintenance, update, and verification of statistical data to international standards. Such standards include the FAO Coordinating Working Party on Fishery Statistics Handbook of Fishery Statistical Standards. Also, there is a process for the use and distribution of research results as a basis for setting management objectives, reference points, and performance criteria, as well as for ensuring adequate linkage between applied research and fisheries management (e.g., adoption of scientific advice). Please note that stock assessment for salmon is intended as the processes that leads to enumeration, escapement goal development, and fishery management activities to meet escapement goals.</i>	☒
EVIDENCE:	
The process for collection of catch data via fish tickets (as appropriate by District/subdistrict) is outlined above as required by state statute. Area management and research biologist stationed near the fishing grounds and rivers supporting salmon are charged with estimating escapements using a variety of methods (e.g. towers, weirs, sonar, aerial survey, test fishing). As appropriate, they also estimate the age and stock composition of both catches and escapements. Catch and escapement data are then combined to determine annual run size. These data are used to re-evaluate escapement goals every three years and presented during annual Board of Fish meetings. Once escapement goals are set (typically as a range) they become the legal basis for regulating fishing opportunity on those stocks. The coordinated activities between management and research staff provides a seamless process of stock assessment that leads to escapement goal development and fishery management activities to meet escapement goals.	
In The Bering Sea and Gulf of Alaska, offshore groundfish fisheries managed by the North Pacific Management Council and NOAA Fisheries, there is a by-catch of Salmon. Observer data is used to collect information on the numbers incidentally caught by species. NOAA Fisheries also makes estimates of the stock composition of these catches.	
Current status/Appropriateness/Effectiveness:	
<i>There is evidence for the production, maintenance, updating, and review of statistical data on catch and fishing effort in the fishery under assessment. There is evidence that the best scientific evidence available is used to inform the fisheries management process. Where there is a legal requirement for the advice of scientific authorities to be adopted, this shall be viewed as conformance with this evaluation parameter.</i>	☒
EVIDENCE:	
Basic catch and effort data are both stored electronically within the Division of Commercial Fisheries fish ticket system and in annual area management reports (see for example Middleton and Russell 2024). Escapement data is also reported annually in area management reports and when advanced technology such as sonar is used, it may also be reported separately in research reports that lay out the technical methods used to collect and analyse the data (see for example (Matter and Tyers 2019). Likewise, stock composition estimates that are made for either catches or escapements is typically reported in research reports where methods and results are presented (see for example Barclay 2024). Results of analysis to estimate escapement goals are documented in reports (see for example Piston and Fish 2024).	
The by-catch of salmon caught in the groundfish fisheries off Alaska is maintained by NOAA (https://www.fisheries.noaa.gov/alaska/commercial-fishing/fisheries-catch-and-landings-reports-alaska)	

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

Evidence of the production, maintenance, updating, and review of data includes a public process for reviewing escapement goals every three years through the Alaska Board of Fisheries. Alaska Statute 39.222 states (among other things) that:

A "biological escapement goal" or "(BEG)" means the escapement that provides the greatest potential for maximum sustained yield; BEG's will be the primary management objective for the escapement unless an optimal escapement or in-river run goal has been adopted; BEG's will be developed from the best available biological information, and should be scientifically defensible on the basis of available biological information; BEG's will be determined by the department and will be expressed as a range based on factors such as salmon stock productivity and data uncertainty; the department will seek to maintain evenly distributed salmon escapements within the bounds of a BEG".

Each year the department produces a summary of the state's salmon escapement goals, the method used to estimate those goals and the most recent nine years of observed escapements (Munro 2024). As outlined Munro (2024) the methods used to estimate escapements include the following:

- In Bristol Bay sockeye escapements are typically estimated by counting migrating fish from towers.
- In glacial and otherwise occluded rivers such as the Yukon, Kuskokwim, Copper, Nushagak, Kenai and Kaslof rivers are sonar is used to count Sockeye, Chinook and Chum salmon.
- Weirs are used in to count Sockeye salmon in several locations including Chignik, Chilkoot, Chilkat, Karluk, McDonald.
- Aerial surveys are used statewide to estimate the escapement of Pink and Chum Salmon.
- Mark-recapture techniques are used to estimate the escapement of Chinook salmon in several areas including the Taku, Chilkat and Stikine rivers and to estimate the Sockeye escapement the Taku and Stikine.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that timely, complete, and reliable statistics are compiled on catch and fishing effort and maintained in accordance with applicable international standards and practices, and in sufficient detail to allow sound statistical analysis for stock assessment. Such data are updated regularly and verified through an appropriate system. The use of research results as a basis for setting management objectives, reference points, and performance criteria, as well as for ensuring adequate linkage between applied research and fisheries management (e.g., adoption of scientific advice) is promoted. Analysis results are distributed accordingly as a contribution to fisheries conservation, management, and development. Examples may include stock assessment reports and other data.



EVIDENCE:

There is substantial evidence that timely, complete and reliable statistics on the catch and effort are collected and maintained. This process begins with the requirement for all commercial landings be documented with a record for each sale (5 AAC 39.130). These statistics are also reported annually by the Area Management staff (see for example Middleton and Russell 2024) and ADFG maintains a database with this information that is accessible by the public ¹³³. Every three years research staff analyze the available data to estimate and review the escapement goals. The reports produced are presented to the Board of Fish in open public meetings (see for example Piston and Fish 2024).

References:

Barclay, A. W. 2024. Genetic stock composition estimates for the Upper Cook Inlet sockeye salmon commercial fishery, 2021-2023. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report No. 5J24-02, Anchorage.

¹³³ https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmon_landings

4.1.1.	Timely, complete, and reliable statistics shall be compiled on catch and fishing effort and maintained in accordance with applicable international standards and practices, and in sufficient detail to allow sound statistical analysis for stock assessment. Such data shall be updated regularly and verified through an appropriate system. The use of research results as a basis for setting management objectives, reference points, and performance criteria, as well as for ensuring adequate linkage between applied research and fisheries management (e.g., adoption of scientific advice) shall be promoted. Results of analysis shall be distributed accordingly as a contribution to fisheries conservation, management, and development.																		
	Matter, A. N., and M. Tyers. 2019. Chinook Salmon escapement in the Chena and Salcha Rivers and Coho salmon escapement in the Delta Clearwater River, 2019-2023. Alaska Department of Fish and Game, Regional Operational Plan ROP.SF.3F.2019.03, Anchorage. https://www.adfg.alaska.gov/FedAidPDFs/ROP.SF.3F.2019.03.pdf Middleton, W. S., and C. W. Russell. 2024. North Alaska Peninsula commercial salmon annual management report, 2023. Alaska Department of Fish and Game, Fishery Management Report No. 24-13, Anchorage. https://www.adfg.alaska.gov/FedAidPDFs/FMR24-13.pdf Munro, A.R. 2024. Summary of Alaska’s 2023 Pacific salmon escapement and commercial harvest. NPAFC Doc. 2152. 13 pp. Alaska Department of Fish and Game. (https://npafc.org). Piston, A. W., and T. M. Fish. 2024. Pink salmon stock status and escapement goals in Southeast Alaska through 2023. Alaska Department of Fish and Game, Special Publication No. 24-16, Anchorage. https://www.adfg.alaska.gov/FedAidPDFs/SP24-16.pdf																		
Numerical score:	<table><tr><td>Starting score</td><td>–</td><td>(</td><td>Number of EPs <u>NOT</u> met</td><td>x</td><td>3</td><td>)</td><td>=</td><td>Overall score</td></tr><tr><td>10</td><td></td><td></td><td>0</td><td></td><td></td><td></td><td></td><td>10</td></tr></table>	Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score	10			0					10
Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score											
10			0					10											
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)	High																		
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)	Full Conformance																		
Non-conformance Number (if applicable):																			

4.1.2.	In the absence of specific information on the stock under consideration, generic evidence based on similar stocks can be used. However, the greater the risk of overfishing, the more specific evidence is necessary to ascertain the sustainability of intensive fisheries.	
Relevance:	Relevant	
Evaluation Parameters		Met?
Process: <i>There is a process that allows for the use of generic evidence based on similar stocks for fisheries with low risk. The greater the risk, the more specific evidence is necessary to assess sustainability. In principle, “generic evidence based on similar stocks” should not suffice, but it may be adequate where there is low risk to the stock under consideration. In general, “low risk to that stock under consideration” would suggest that there is very little chance of the stock becoming overfished (e.g., where the exploitation rate is very low and the resilience of the stock is high). However, the evidence for low risk and the justification for using surrogate data shall come from the stock assessment itself.</i>		x
EVIDENCE: In virtually all cases, stock specific data is used to establish escapement goals. When “fine scale” stock specific catch and or age composition is not available (such as for an individual river) the department aggregates individual river systems at various levels to estimate the escapement goal. ADFG has several methods for establishing a Sustainable Escapement Goal or “SEG” utilizing the available catch and escapement data at an aggregated level. The first is theoretical Spawner–Recruit Analysis. It may be used in in situations with few or no stock-specific harvest estimates and/or age data. In this case, information from nearby stocks, or generalizations about the species, are used in a spawner–recruit production model to estimate the number of spawners needed to achieve maximum sustained yield (e.g., Clark 2005). The second method that may be used is termed “Empirical Observation” in this case, goals are based on observed escapements over time and may be calculated as the average escapement or the value of a low escapement for which there is evidence that the stock is able to recover (ADFG 2004). The third method is “Risk Analysis”. This method uses possible management error (unneeded management action or mistaken inaction) in future years based on a precautionary reference point established using past observations of escapement (Bernard et al. 2009). This method is primarily used to guide establishment of a lower-bound SEG for nontargeted stocks. A fourth method uses a “3- tier percentile approach” and is based on the principle that escapements of a stock within some range of percentiles observed over the time series of escapements and associated harvest from fishing represents a proxy for maintaining escapements within a range that encompasses a sustainable yield		
Current status/Appropriateness/Effectiveness: <i>Information has been utilized from generic evidence based on similar fishery situations. Based on the risk of overfishing, the information utilized is of higher precision to account for higher risks (i.e., intensive fisheries).</i>		☑
EVIDENCE: As stated previously, “generic evidence” is not typically used in Alaska, but that escapement goals and management is often based on aggregations of similar stocks. This is especially true for Pink, Chum and many Coho salmon runs. The type of goal and escapements for the last nine years is published annually (Munro 2024). This report clearly demonstrates how each goal was set and the result of management to achieve those goals.		
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that in the absence of specific information on the stock under consideration, generic evidence based on similar stocks can be used for fisheries with low risk to that stock under consideration. However, the greater the risk of overfishing, the more specific evidence is necessary to ascertain the sustainability of intensive fisheries. Examples may include stock assessment reports and other data.</i>		☑
EVIDENCE: There is substantial evidence regarding how sustainable escapement goals were set. This includes detailed information on how escapements are measured and the factors that may affect precision and accuracy (see for example McKinley et al. 2024) and how		

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

the available escapement data were analysed (see for example Morella et al. 2024). Last, a detailed summary of annual escapements in relation to goals is published (Munro 2024).

References:

ADF&G. 2004. Escapement goal review of select AYK Region salmon stocks. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 3A04-01, Anchorage. <http://www.sf.adfg.state.ak.us/FedAidpdfs/RIR.3A.2004.01.pdf>

Bernard, D. R., J. J. Hasbrouck, B. G. Bue, and R. A. Clark. 2009. Estimating risk of management error from precautionary reference points (PRPs) for non-targeted salmon stocks. Alaska Department of Fish and Game, Special Publication No. 09-09, Anchorage. <http://www.sf.adfg.state.ak.us/FedAidPDFs/SP09-09.pdf>

Clark, R. A. 2005. Stock status and recommended escapement goals for Coho Salmon in selected waters along the Juneau road system, 1981-2004. Alaska Department of Fish and Game, Special Publication No. 05-21, Anchorage. <http://www.sf.adfg.state.ak.us/FedAidPDFs/sp05-21.pdf>

McKinley, T. R., J. W. Erickson, T. Eskelin, N. DeCovich, and H. Hamazaki. 2024. Review of salmon escapement goals in Upper Cook Inlet, Alaska, 2023. Alaska Department of Fish and Game, Fishery Manuscript No. 24-01, Anchorage. <https://www.adfg.alaska.gov/FedAidPDFs/FMS24-01.pdf>

Morella, J. R., R. M. Ertz, J. W. Erickson, J. W. Savereide, A. N. Matter, and T. R. McKinley. 2024. Escapement goal review of Copper and Bering Rivers, and Prince William Sound Pacific salmon stocks, 2024. Alaska Department of Fish and Game, Fishery Manuscript No. 24-03, Anchorage. <https://www.adfg.alaska.gov/FedAidPDFs/FMS24-03.pdf>

Munro, A.R. 2024. Summary of Alaska's 2023 Pacific salmon escapement and commercial harvest. NPAFC Doc. 2152. 13 pp. Alaska Department of Fish and Game. (<https://npafc.org>).

Numerical score:	Starting score		Number of EPs <u>NOT</u> met					Overall score	
	10	-	(	0	x	3	)	=	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)									High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)									Conformance
Non-conformance Number (if applicable):									

9.3.1.4 Supporting Clause 4.2.

4.2.		An observer scheme designed to collect accurate data for research and support compliance with applicable fishery management measures shall be established.	
Relevance:		Relevant.	
Evaluation Parameters			
Process: <i>An observer program is present. There may be cases where collection of accurate data for research and support compliance could be established without the use of observers or a formal observer scheme (i.e., inspection scheme, enforcement, port sampling, at shore inspection, voluntary or compulsory logbooks, e-logbooks or other harvester collected data, electronic monitoring [video], or bycatch surveys). The reliability and accurateness of that system(s) would need to be verified accordingly. Note also that some fisheries observer programs are designed to collect biological data and others serve mainly as a compliance or enforcement tool. This shall be considered accordingly in the overall evaluation of this clause. Assessors shall question primarily whether the required data for fisheries management are collected or if there are important data gaps (e.g., because of the absence of an observer program).</i>			Met?

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

The number of salmon incidentally caught by species in the offshore groundfish fisheries is considered accurate and reliable, and this data is maintained by NOAA Fisheries ¹³⁴.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that an observer scheme designed to collect accurate data for research and support compliance with applicable fishery management measures is established. Examples may include stock assessment, survey, observer, or other reports.



EVIDENCE:

Results of the observer programs in Southeast for Chinook Salmon were reported by Seibel *et al.* (1989). Results of the Marine Mammal Observer program were reported to/by NOAA for gillnet fisheries in Kodiak, Cook Inlet, Prince William Sound, Yakutat and Unimak Island, see for example Wynne *et al.* (1991).

References:

PSC-JTCC. 2023. Annual report of catch and escapement for 202. TCCHINOOK (23)-02 Pacific Salmon Commission., Vancouver, B.C. Canada.
<https://www.psc.org/publications/technicalreports/technical-committee-reports/chinook/>

Seibel, M., A. Davis, A., J. Kelly and J. E. Clark. 1989. Observations on Chinook salmon hook and release in the 1988 Southeast Alaska troll fishery. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 1J89-41, Juneau. (not available on-line).

Wynne, K, D. Hicks and N. Munro. 1991. 1990 Salmon gillnet fisheries observer programs in Prince William Sound and South Unimak Alaska. Final report to NOAA. Saltwater Inc. Anchorage AK.
<https://www.fisheries.noaa.gov/resource/document/1990-salmon-gillnet-fisheries-observer-programs-prince-william-sound-and-south>.

Numerical score:	Starting score	Number of EPs <u>NOT</u> met				Overall score	
	10	-	(	0	x 3	) =	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)							High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)							Full Conformance
Non-conformance Number (if applicable):							

¹³⁴ <https://www.fisheries.noaa.gov/alaska/commercial-fishing/fisheries-catch-and-landings-reports-alaska>

9.3.1.5 Supporting Clause 4.2.1.

4.2.1.	Where necessary, fisheries management organizations and regional fisheries management organizations and other such arrangements should strive to achieve a level and scope of observer programs sufficient to provide quantitative estimates of total catch, discards, and incidental takes of living aquatic resources.		
Relevance:	Relevant.		
Evaluation Parameters			
Process: <i>There is a clear system that allows the observer program, or any other appropriate data gathering system as appropriate, to provide sufficient quantitative estimates of total catch, discards, and incidental takes of living aquatic resources.</i>			☒
EVIDENCE: As mentioned in 4.2, observer programs are rarely used in Alaska salmon fisheries. The legal authority for this activity is spelled out in state regulations as noted above. As mentioned in 4.2 there is an observer program in place to among other things, record the number of salmon incidentally caught in groundfish fisheries in the EEZ of Alaska.			
Current status/Appropriateness/Effectiveness: <i>The data collected by the observer program is considered accurate and useful, especially for providing quantitative estimates of total catch, discards, and incidental takes of living aquatic resources.</i>			☒
EVIDENCE: As mentioned in 4.2, observer programs are rarely used in Alaska salmon fisheries. When they have been used, they were considered accurate and useful for estimating discards and incidental takes.			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the observer program is established and able to provide quantitative estimates of total catch, discards, and incidental takes of living aquatic resources. Examples may include stock assessment, observer, survey, or other reports.</i>			☒
EVIDENCE: As mentioned in 4.2 reports that resulted from the few observer programs that have taken place demonstrated their usefulness to management.			
References:	See 4.2		
Numerical score:	Starting score 10	Number of EPs <u>NOT</u> met 0	Overall score 10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Full Conformance
Non-conformance Number (if applicable):			

9.3.1.6 Supporting Clause 4.3.

4.3.	A fisheries management organization, regional fisheries management organizations or arrangements shall compile data and make them available, in a manner consistent with any applicable confidentiality requirements, in a timely manner and in an agreed format to all members of these organizations and other interested parties in accordance with agreed procedures.
Relevance:	Relevant.
Evaluation Parameters	
Process: <i>There is a system within the regional body structure that allows for data distribution in line with confidentiality requirements.</i>	X
EVIDENCE: Alaska Statute 16.05.815 (Confidential Nature of Certain Reports and Records) requires strict confidentiality of an individual fisher's sales data. A fisher's data is protected and may not be released to the public. As a working rule, ADFG's policy is that if three or fewer fishermen report sales within time, area strata, the data will be redacted from public reports or pooled with other catch data into a larger stratum until more than three individual's records are included. There are processes in place to share data with other states through the Pacific States Marine Fisheries Commission (PSMFC)¹³⁵ and with Canada through the Pacific Salmon Commission (PSC). The PSMFC maintains a coast-wide database of catch and release/recovery coded micro-wire tags. A committee within the PSMFC composed of representatives of states, federal and tribal staff guide development and maintenance of the database in accordance with their respective agencies policies and regulations such as confidentiality. The Pacific Salmon Commission has established a Data Sharing Technical Committees to compile and evaluate stock assessment data also with representative of all participating agencies that also ensures confidentiality (PSC-JCDS 1989).	
Current status/Appropriateness/Effectiveness: <i>There is evidence proving that confidentiality requirements are satisfied when data is distributed to the various parties.</i>	X
EVIDENCE: PSC-JCDS. 1989. Information content and standards for a coastwide coded-wire tag database. PSC Report TCDS (89) – 1. Vancouver, B.C. Canada. 183p. https://www.psc.org/publications/technical-reports/technical-committee-reports/data-sharing/ PSC-JTCC. 2023. Annual report of catch and escapement for 202. TCCHINOOK (23)-02 Pacific Salmon Commission., Vancouver, B.C. Canada. https://www.psc.org/publications/technicalreports/technical-committee-reports/chinook/ Weiland, K. 2003. Summary of Bristol Bay Sockeye Salmon catches by gear type, 1965-2003. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A03-25, Anchorage. http://www.adfg.alaska.gov/fedaidpdfs/RIR.2A.2003.25.pdf	
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that a fisheries management organization, regional fisheries management organizations or arrangements compile data and make them available, in a manner consistent with any applicable confidentiality requirements, in a timely manner and in an agreed format to all members of these organizations and other interested parties in accordance with agreed procedures. Examples may include reports where confidentiality requirements have been affected.</i>	X
EVIDENCE:	

¹³⁵ <https://www.psmfc.org/program/regional-mark-processing-center-coded-wire-tag-rmpc?pid=17>

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

Evidence of maintaining strict confidentiality can be seen at Board of Fish meetings when a proposal seeks to place some kind of regulation on a small geographic location and the ADFG cannot release catch data because three or fewer fishermen have reported catches in that area, see for example Weiland et al. (2003).

Evidence of the PSMFC requirement to ensure confidentiality can be observed by the online reports that the site produces (see footnote below). The report of the PSC's Joint Committee on Data Sharing (PSC-JCDS 1989) explains the process used and an example of the work completed as a result of data sharing is a report of the Chinook Technical Committee PSC-JCTC (2023).

References:					
Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	x 3
	10			0	
			)		=
					Overall score
					10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)					High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)					Full Conformance
Non-conformance Number (if applicable):					

9.3.1.7 Supporting Clause 4.4.

4.4.	States shall stimulate the research required to support policies related to fish as food.	
Relevance:	Relevant	
Evaluation Parameters		Met?
Process: <i>There is research to support policies related to fish as food.</i>		X
EVIDENCE: State and national policies regarding seafood are guided by the U.S. Food and Drug Administration (FDA), U.S. Department of Agriculture (USDA), the U.S. National Institute of Health (NIH), and Alaska Seafood Marketing Institute (ASMI). ASMI is the state agency primarily responsible for increasing the economic value of Alaskan seafood through marketing programs, quality assurance, industry training and research. The powers of the ASMI Board (AS 1651.090) include conducting or contracting for scientific research to develop and discover health, dietetic, or other uses of seafood harvested and processed in the state. ADFG Division of Subsistence has published numerous research reports regarding the use of fish as food, see for example Sill, Hutchinson-Scarborough and Koster 2022).		
Current status/Appropriateness/Effectiveness: <i>There is evidence of this research.</i>		☒
EVIDENCE Two specific examples are Karl et al (2011) and Crapo et al. (2010). Other examples can be found at the ASMI website ¹³⁶ .		
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the State stimulates the research required to support policies related to fish as food.</i>		☒
EVIDENCE: The existence and operation of the ASMI and Kodiak Marine and Seafood Center along with research reports (see for example Faber et al. (2010) and Nettleton (2009) is sufficient evidence that the state stimulates research in support of policies related to fish as food.		
References:	Baumann, Karl., F. Ostermeyer U, Kuhn T, Klimpel S. 2011. <i>Anisakis simplex</i> (s.s.) larvae in wild Alaska salmon: no indication of post-mortem migration from viscera into flesh. Dis Aquat Org 94:201-209. https://doi.org/10.3354/dao02317 Crapo, Charles, Alexandra C.M. Oliveira, Duy Nguyen, Peter J. Bechtel, Quentin Fong. 2010. Development of a Method to Produce Freeze-Dried Cubes from 3 Pacific Salmon Species. Jour. Food Science. Vol 75, Issue 5. https://ift.onlinelibrary.wiley.com/doi/abs/10.1111/j.1750-3841.2010.01642.x Faber, T., P. Bechtel, D. Hernot, C. Parsons, K. Swanson, S. Smiley and G. Fahey. 2010. Protein digestibility evaluations of meat and fish substrates using laboratory, avian, and illegally cannulated dog assays. Journal Animal Science. 88: 1421-1432. https://academic.oup.com/jas/article/88/4/1421/4745685	

¹³⁶ https://www.alaskaseafood.org/resources/research-library/?keyword=&fish_type%5B%5D=salmon-roe&fish_type%5B%5D=salmon&fish_type%5B%5D=canned-pouched-salmon&fish_type%5B%5D=coho-salmon&fish_type%5B%5D=keta-salmon&fish_type%5B%5D=king-salmon&fish_type%5B%5D=pink-salmon&fish_type%5B%5D=smoked-salmon&fish_type%5B%5D=sockeye-salmon.

4.4.	States shall stimulate the research required to support policies related to fish as food.			
	Nettleton, Joyce. 2009. Are fish and plant omega-3s the same? ASMI. Juneau, AK. https://www.ncbi.nlm.nih.gov/pubmed/1825498 Sill, L.A., L. Hutchinson-Scarborough and D. Koster. 2022. Harvest and Use of Wild Resources in Egegik, Pilot Point, and Ugashik, 2014. ADFG Div. Subsistence. Tech. Paper No. 487, Douglas.			
Numerical score:	Starting score	-	(Number of EPs <u>NOT</u> met x 3)	= Overall score
	10	-	(0 x 3)	= 10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)				High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)				Full Conformance
Non-conformance Number (if applicable):				

9.3.1.8 Supporting Clause 4.5.

4.5.	There shall be sufficient knowledge of the economic, social, marketing, and institutional aspects of fisheries collected through data gathering, analysis, and research, as well as comparable data generated for ongoing monitoring, analysis, and policy formulation.
Relevance:	Relevant.
Evaluation Parameters	
Process:	
<i>There is a system in place for collecting economic, social, marketing, and institutional knowledge of the fisheries.</i>	
Met?	
X	
EVIDENCE: The state relies on several sources of social, cultural and economic information to develop management policy. There are 82 local Advisory Committees composed of interested citizens most of whom are participants in commercial, sport, subsistence or personal use fisheries to provide local knowledge of the social, economic and institutional factors to the BOF (5AAC 96.010) The Commercial Fisheries Division maintains data on the ex-vessel value of commercial landings and on wholesale value. The Sport Fish Division periodically estimates the value of recreational fishing. The Division of Subsistence publishes studies on the history and current use of salmon for subsistence. The University of Alaska maintains Institute of Social and Economic Research that periodically conducts research on the salmon fisheries of Alaska. The CFEC evaluates the optimum number of permits that should be issued for a fishery. The Alaska Seafood Marketing Institute (ASMI) uses these data in developing marketing campaigns. The Alaska legislature is made aware of the social, cultural and economic value of salmon when crafting statutes.	
Current status/Appropriateness/Effectiveness:	
<i>These data are used for ongoing monitoring, analysis, and policy formulation.</i>	
X	
EVIDENCE: Knowledge of the economic, social and cultural aspects of fish and fishing are critical to management of Alaska's salmon fisheries. The need for these kinds of data is evident in the regulations and statutes. For example: 1. The BOF must (AS 16.05.251(17) (e)) consider seven social, economic and cultural criteria when adopting a regulation that determine how to distribute fishing opportunity among identified user groups. 2. The BOF must (AS 16.05.25) consider 13 socio-economic and cultural factors to determine what areas will be open or closed to subsistence fishing. 3. The Policy for the Management of Sustainable Salmon Fisheries (5AAC 39.222(c)(5)) requires the BOF to consider (among other things) the social, cultural and economic risks and needs of future generations.	
Evidence Basis:	
<i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there is sufficient knowledge of the economic, social, marketing, and institutional aspects of fisheries, that they are adequately researched, and that comparable data are generated for ongoing monitoring, analysis, and policy formulation. Examples may include reports on social/cultural/economic value of the resource.</i>	
X	
EVIDENCE: There is scheduled testimony of the local advisory Committees at all BOF meeting as well as extensive public testimony, see for example the recent 2025 BOF meeting for Southeast Alaska ¹³⁷ . The Division of Subsistence publishes numerous papers on the history and current use of salmon for subsistence (see for example Fall et al. (2019), Sill et al. (2019) and Trainor et al. (2019)).	

¹³⁷ <https://www.adfg.alaska.gov/index.cfm?adfg=fisheriesboard.meetinginfo&date=01-28-2025&meeting=ketchikan>

4.5. There shall be sufficient knowledge of the economic, social, marketing, and institutional aspects of fisheries collected through data gathering, analysis, and research, as well as comparable data generated for ongoing monitoring, analysis, and policy formulation.

The Commercial Fisheries Entry Commission publishes research on the optimum number of permits that should be issued for a fishery (see for example Schelle *et al.* (2004)).

The University of Alaska Institute of Social and Economic Research conducts research on the salmon fisheries of Alaska (see for example Knapp (2011)).

The Sport Fish Division has published reports on the value of recreational fishing (see for example Southwick *et al.* (2008)).

The Commercial Fisheries Division maintains data on the ex-vessel value of commercial landings and on wholesale value.

Various institutions have also conducted economic studies. For instance, the public non-profit hatcheries contracted to evaluate the economic impact of hatchery production (McDowell Group 2018) and the Salmon Alliance contracted to determine the value of the seafood industry in South Central Alaska (McDowell Group 2015). ASMI contracted with the McKinley Group to estimate the value of Alaska's seafood industry (McKinley 2022).

References:

Fall, J., A. Godduhn, G. Halas. L.Hutchinson-Scarborough, B. Jones, B. McDavid, E. Mikow, L. Sill, A Wiita, T. Lemons. 2019. Alaska subsistence and personal use salmon fisheries 2016 annual report. ADF&G Division of Subsistence, Technical Paper No. 446. Juneau. <http://www.adfg.alaska.gov/techpap/TP446.pdf>

Knapp, G. 2011. Local permit ownership in Alaska salmon fisheries. Marine Policy 35(5) pgs. 658-666. <https://www.semanticscholar.org/paper/Local-permit-ownership-in-Alaska-salmon-fisheries-Knapp/11585d74a42c486c4fc9d62e970552f1f486fbc9>

McDowell Group. 2015. The economic impact of the seafood industry in South Central Alaska. Mc Dowell Group. Glacier Hwy. Suite 201. Juneau AK. <https://www.mcdowellgroup.net/portfolio-posts/economic-impact-of-the-seafood-industry-in-southcentral-alaska/>

McDowell Group. 2018. The economic impact of Alaska's Salmon hatcheries. Mc Dowell Group. 3960 Glacier Hwy. Suite 201. Juneau AK. <http://www.mcdowellgroup.net/wp-content/uploads/2018/10/economic-impact-of-alaskas-salmon-hatcheries.pdf>

McKinley Group. 2022. The economic Value of Alaska's Seafood Industry. 801 West 10th Street, Suite 100B. Juneau, AK 99801. https://mckinleyresearch.com/wp-content/uploads/2023/08/mrg_asmi-economic-impacts-report_final.pdf

Sill, L., G. Halas, D. Koster. 2019. Copper River Chinook Salmon: the intersection of commercial fisheries and the subsistence way of life in Cordova, Alaska. ADF&G Division of Subsistence, Technical Paper No. 444.Juneau. <http://www.adfg.alaska.gov/techpap/TP444.pdf>

Schelle, K., K. Iverson, N. Free-Sloan and S. Carlson. 2004. Bristol Bay salmon drift gillnet fishery optimum number report. CFEC Report 04-3N. Juneau AK. https://www.cfec.state.ak.us/RESEARCH/04_3N.htm

Sethi, S., M. Reimer, and G. Knapp. 2014. Alaskan fishing community revenues and the stabilizing role. of fishing portfolios. Marine Policy 48 (2014)134–141. <https://pdfs.semanticscholar.org/ed6a/dc3bc8d9bbff628544b553d4b04c9d3c30dc.pdf>

Southwick Associates Inc. and W. J. Romberg, A. E. Bingham, G. B. Jennings and R. A. Clark. 2008. Economic impacts and contributions of sport fishing in Alaska, 2007. Alaska Department of Fish and Game, Professional Paper No. 08-01, Anchorage, AK. <http://www.adfg.alaska.gov/FedAidpdfs/PP08-01.pdf>

4.5.	There shall be sufficient knowledge of the economic, social, marketing, and institutional aspects of fisheries collected through data gathering, analysis, and research, as well as comparable data generated for ongoing monitoring, analysis, and policy formulation.				
	Trainor, A. B.M. McDavid, L.A. Sill, L.S. Naaktgeboren. 2019. Local traditional knowledge of the freshwater life stages of Yukon River Chinook and Chum salmon in Anvik, Huslia, Allakaket, and Fort Yukon. ADF&G Division of Subsistence, Technical Paper No. 447. Juneau. http://www.adfg.alaska.gov/techpap/TP%20447.pdf				
Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	x 3 = Overall score
	10		(	0	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)					High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)					Full Conformance
Non-conformance Number (if applicable):					

9.3.1.9 Supporting Clause 4.6.

4.6	The fisheries management organization shall investigate and document traditional fisheries knowledge and technologies—in particular those applied to small-scale fisheries—in order to assess their application to sustainable fisheries conservation, management, and development.
Relevance:	Relevant
Evaluation Parameters	
Process: <i>Traditional fisher knowledge has been investigated. Note that for highly developed fisheries that knowledge may already have been integrated into fisheries management.</i>	
EVIDENCE: While traditional knowledge is used when setting fishing regulations in the Board of Fisheries process and for select fisheries in-season to help assess run strength and set time and area fishing regulations, we do not consider any of the Alaska commercial fisheries to be “small scale”, as such we do not believe this clause to be particularly applicable. However, we do not wish to diminish the role traditional knowledge plays in the management of Alaska’s commercial salmon fishery. As such, we provide the following information. Essentially all stock assessments used for commercially harvested salmon in Alaska are based on modern fishery science methods. However, the state has conducted research to document traditional knowledge on commercially fished salmon (Trainor et al. (2019), Ream and Merriam (2017), Bronwyn and Kukkonen (2017)). The Alaska Board of Fisheries provides a forum for traditional knowledge to be brought into the management process. The Arctic-Yukon-Kuskokwim Sustainable Salmon Initiative (AYK SSI) is another example of how traditional knowledge is integrated into salmon management. Led by Tribal organizations, AYK SSI funds Western science projects aimed at improving understanding of salmon populations in the AYK region. This initiative reflects a collaborative approach where Indigenous leadership guides research priorities, and traditional knowledge informs scientific inquiry. The Kuskokwim River Salmon Management Working Group was formed in 1988 in response to requests from stakeholders who sought a more active role in salmon management along the Kuskokwim River. The Working Group is made up of 14-members, seats are provided for elders, subsistence fishermen, processors, commercial fishermen, sport fishermen, Kuskokwim River Inter-Tribal Fish Commission, member at large, federal subsistence regional advisory committee, and the Alaska Department of Fish and Game. Members participate on a voluntary basis. Participation in the Working Group process requires a great deal of time from its members and agency staff. KRITFC is also engaged in co-management of salmon with Federal partners (primarily USFWS) along the federally managed waters of the Kuskokwim River. Tribal members serve as KRITFC in-season managers who work with USFWS staff to manage fishery openings. The Yukon River Drainage Fisheries Association’s RDFA’s sponsors in-season weekly teleconferences (Jenkins 2017) that includes fishers from 16 villages and locations (including one in Canada) and managers from ADFG, USFWS, and DFO Canada. Managers get information from local fishers about current and past conditions as well as input and buy-in on potential management actions. Local fishers get to share their knowledge with and obtain information from managers as well as provide input to management decisions.	
Current status/Appropriateness/Effectiveness: <i>There are records of the documentation of small-scale fisher practices.</i>	
EVIDENCE: <i>As stated previously there are no small-scale commercial salmon fisheries in Alaska.</i>	
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fisheries management organization investigates and documents traditional fisheries knowledge and technologies—in particular those applied to small-scale fisheries—in order to assess their application to sustainable fisheries conservation, management, and development. Examples may include various fisheries reports.</i>	

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

EVIDENCE:

The state has conducted research to document traditional knowledge for several commercially fished salmon stocks (Bronwyn and Kukkonen 2017; Trainor et al. 2019; Ream and Merriam, 2017; Joshua and Merriam, 2017)

References:

Bronwyn, J, and M. Kukkonen. 2017. Local and traditional knowledge of abundance of Chinook Salmon in the Kenai River. ADF&G Division of Subsistence, Technical Paper No. 431. <http://www.adfg.alaska.gov/techpap/TP431.pdf>

Jenkins, W. 2017. Yukon River In-Season Salmon Management Teleconferences Final Report for Project CC-01-6p, and weekly summaries for 2015 teleconferences - <http://www.yukonsalmon.org/?s=in-season+weekly+teleconference>.

Ream, J. and J. Merriam. 2017. Local and traditional knowledge of Stikine River Chinook Salmon: A local perspective on a vital commercial, sport, and subsistence fish. ADF&G Division of Subsistence, Technical Paper No. 430. <http://www.adfg.alaska.gov/techpap/TP430.pdf>

Trainor, A. B.M. McDavid, L.A. Sill, L.S. Naaktgeboren. 2019. Local traditional knowledge of the freshwater life stages of Yukon River Chinook and Chum Salmon in Anvik Huslia, Allakaket, and Fort Yukon. ADF&G Division of Subsistence, Technical Paper No. 447. Juneau. <http://www.adfg.alaska.gov/techpap/TP%20447.pdf>.

Numerical score:	Starting score	– (Number of EPs <u>NOT</u> met x 3)			=	Overall score
	10		0			10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)						High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)						Full Conformance
Non-conformance Number (if applicable):						

9.3.1.10 Supporting Clause 4.7.

4.7	If a fisheries management organization is conducting scientific research activities in waters of another State, it shall ensure that their vessels comply with the laws and regulations of that State and international law.		
Relevance:	Relevant		
Evaluation Parameters			
Process: <i>There is a system in place to manage the conduct of research vessels operating in waters of other States.</i>			Met? X
EVIDENCE: The state of Alaska does not conduct salmon research aboard vessels in the waters of other states. There are however cooperative studies in the Transboundary Rivers and ADFG employees may travel into Canada via skiffs to assist in field activities. All such activities are coordinated through the Transboundary Rivers Technical Committee or Yukon River Technical Committee. ADFG has also participated in International scientific efforts like the International Year of the Salmon			
Current status/Appropriateness/Effectiveness: <i>If a fisheries management organization is conducting scientific research activities in waters of another State, there is record of such shared research activities and they comply with required regulations.</i>			X
EVIDENCE: All cooperative research in the Canadian portion of the Transboundary Rivers is organized through the Pacific Salmon Commissions Transboundary Rivers Technical Committee or Yukon River Technical Committee. Records of the cooperative research and management activities are reported annually, see for example PSC-TCTR (2022) and Yukon JTC (2024).			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that if a fisheries management organization is conducting scientific research activities in waters of another State, it ensures that their vessels comply with the laws and regulations of that State and international law. Examples may include survey reports.</i>			X
EVIDENCE: All cooperative research is coordinated and reported through the respective Technical Committees and Panels. See references below for examples of the work of the Technical Committees.			
References:	PSC-TCTR. 2022. Final estimates of Transboundary River salmon production, harvest and escapement and a review of joint enhancement activities in 2019. Report TCTR (22)-01 PSC. Vancouver, B.C. Canada. https://www.psc.org/publications/technical-reports/technical-committee-reports/transboundary/ Yukon JTC .2024. Yukon River Salmon 2023 Season Summary and 2024 Outlook. Yukon River Panel. https://www.yukonriverpanel.com/publications/yukon-river-joint-technical-committee-reports/		
Numerical score:	Starting score 10	Number of EPs NOT met 10	$- \left(\text{Number of EPs NOT met} \times 3 \right) = \text{Overall score}$ 10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			/Full Conformance
Non-conformance Number (if applicable):			

9.3.1.11 Supporting Clause 4.8.

4.8.	Adoption of uniform guidelines governing fisheries research conducted on the high seas shall be promoted and, where appropriate, support the establishment of policies that include, inter alia, facilitating research at the international and sharing the research results with affected States.		
Relevance:	Not relevant.		
Evaluation Parameters			Met?
Process: <i>There is a mechanism in place to allow the development and review of guidelines governing fisheries research conducted on the high seas.</i>			X
EVIDENCE: There is coordination of salmon research on the high seas. This is accomplished through the North Pacific Anadromous Fish Commission (NPAFC). The NPAFC is an international organization established by the Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean signed in 1992. The member countries are Canada, Japan, Republic of Korea, Russian Federation and United States. The Convention area includes the North Pacific Ocean and its adjacent seas, north of 33 degrees North Latitude beyond 200-miles zones of the coastal States. While key convention measures are aimed at prohibiting directed fishing and retention of incidentally caught salmon in the Convention area, the Convention also authorizes coordinated research on anadromous stocks. As such, the Convention authorizes fishing for anadromous fish in the Convention Area for scientific purposes under national and joint research programs approved by the NPAFC.			
Current status/Appropriateness/Effectiveness: <i>There is a record of uniform high seas research guidelines or a mechanism to create them.</i>			X
EVIDENCE: The Commission's Science Plan was developed by consensus through the Science Sub-Committee, (SSC, 2023). Under the plan, member countries cooperate in collecting, reporting and exchanging biostatistical data, biological samples, fisheries data and organize scientific communications, such as seminars, workshops, exchanges of scientific personnel and publications.			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that adoption of uniform guidelines governing fisheries research conducted on the high seas is promoted and, where appropriate, supports the establishment of mechanisms, including, inter alia, adopting uniform guidelines to facilitate research at the international level, and encouraging such research results be shared with affected States. Examples may include survey reports, or high seas guidelines.</i>			X
EVIDENCE: The Commission organized a coordinated multi-nation effort to conduct various research during the summer of 2022, a summary of findings is McKinnell et al. (2024).			
References:	McKinnell, S., W. Stanbury, and V. Radchenko. 2024. Salmon in a Rapidly Changing World: Synthesis of the International Year of the Salmon and a Roadmap to 2030. N. Pac. Anadr. Fish Comm. Bull. 7. 93 pp. https://www.npafc.org/bulletin-7/ The Science Sub-Committee (SSC). 2023. North Pacific Anadromous Fish Commission Science Plan 2023–2027. NPAFC Doc. 2120, App. 2. 7 pp. The Science Sub-Committee (SSC), the Committee on Scientific Research and Statistics (CSRS) https://www.npafc.org/wp-content/uploads/Public-Documents/2023/2120-Appendix-2-SSC.pdf		
Numerical score:	Starting score 10	Number of EPs NOT met 10	$10 - (10 \times 3) = 10$
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High

4.8.	Adoption of uniform guidelines governing fisheries research conducted on the high seas shall be promoted and, where appropriate, support the establishment of policies that include, inter alia, facilitating research at the international and sharing the research results with affected States.
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)	
Non-conformance Number (if applicable):	

9.3.1.12 Supporting Clause 4.9.

4.9	If appropriate, the fisheries management organization and relevant international organizations shall promote and enhance the research capacities of developing countries, inter alia, in the areas of data collection and analysis, information, science and technology, human resource development, and provision of research facilities, in order for them to participate effectively in the conservation, management, and sustainable use of living aquatic resources.		
Relevance:	Not Relevant		
	This clause is not applicable because the shared stocks are not fished by one or more developing States.		
Evaluation Parameters			Met?
Process: <i>There is a mechanism in place by which the research capacities of developing countries can be developed and enhanced. This could include, but is not limited to, the provision of personnel, equipment, funding, or cooperation on data collection and stock assessment.</i>			☐
EVIDENCE:			
Current status/Appropriateness/Effectiveness: <i>There are recognizable examples of instances in the history of the fishery under assessment where actions by the managers of the unit of certification have promoted or enhanced the research capacity of one or more developing nations in the ways described above.</i>			☐
EVIDENCE:			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that if appropriate, the fisheries management organization and relevant international organizations promote and enhance the research capacities of developing States, inter alia, in the areas of data collection and analysis, information, science and technology, human resource development, and provision of research facilities, in order for them to participate effectively in the conservation, management, and sustainable use of living aquatic resources. Examples may include various data or reports.</i>			☐
EVIDENCE:			
References:			
Numerical score:	Starting score 10	– (Number of EPs <u>NOT</u> met x 3) =	Overall score NR
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			
Non-conformance Number (if applicable):			

9.3.1.13 Supporting Clause 4.10.

4.10.	Competent national organizations shall, where appropriate, render technical and financial support to States upon request and when engaged in research investigations aimed at evaluating stocks which have been previously unfished or very lightly fished.		
Relevance:	Not relevant. This clause is not applicable because the shared stocks are not fished by one or more developing States.		
Evaluation Parameters			Met?
Process: <i>There is a mechanism to allow a national organization to render technical and financial support to the State.</i>			☐
EVIDENCE:			
Current status/Appropriateness/Effectiveness: <i>There is a record of the provided technical and financial support.</i>			☐
EVIDENCE:			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that competent national organizations, where appropriate, render technical and financial support to States upon request and when engaged in research investigations aimed at evaluating stocks which have been previously unfished or very lightly fished. Examples may include various data or reports.</i>			☐
EVIDENCE:			
References:			
Numerical score:	Starting score 10	– (Number of EPs <u>NOT</u> met x 3) =	Overall score NR
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			
Non-conformance Number (if applicable):			

9.3.1.14 Supporting Clause 4.11.

4.11.	Relevant technical and financial international organizations shall, upon request, support States in their research efforts, devoting special attention to developing countries—in particular the least developed among them and small developing island countries.		
Relevance:	Not relevant. This clause is not relevant because there is no international management component of Alaska salmon fisheries occurring within a developing country.		
Evaluation Parameters			Met?
Process: <i>The international management component of the fishery is engaged in processes that support the fishery based in developing countries.</i>			☐
EVIDENCE:			
Current status/Appropriateness/Effectiveness: <i>There is a record of the provided technical and financial support.</i>			☐
EVIDENCE:			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that relevant technical and financial international organizations are, upon request, supporting States in their research efforts, and are devoting special attention of developing countries—in particular the least developed among them and small island developing countries. Examples may include various data or reports.</i>			☐
EVIDENCE:			
References:			
Numerical score:	Starting score 10	– (Number of EPs <u>NOT</u> met x 3) =	Overall score NR
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			
Non-conformance Number (if applicable):			

9.3.2 Fundamental Clause 5. Stock assessment

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.

9.3.2.1 Supporting Clause 5.1.

5.1.	An appropriate institutional framework shall be established to determine the applied research required and its proper use (i.e., assess/evaluate stock assessment model/practices) for fishery management purposes.
Relevance:	Relevant
Evaluation Parameters	
Process: <i>There is an established institutional framework for fishery management purposes that determines applied research needs and use.</i>	☒
EVIDENCE: Alaska salmon resources are abundant, diverse and spread over an immense landscape. To develop the scientific knowledge and management expertise needed to successfully implement sustained yield, as required by the state's constitution, ADFG is organized in a hierarchal scheme. The core research and management functions are conducted by professional staff deployed to 23 area offices located throughout the state. Overarching the area office structure, are four specialized Divisions within the Department that have responsibilities for fisheries issues. The Commercial Fish Division has the primary responsibility for research and management of stocks that are harvested commercially. The Sport Fish Division is responsible for research and management of stocks of primary interest to recreational fishermen, and also takes the lead role in research on several salmon stocks that are shared between commercial and recreational fishers. The Habitat Division conducts applied research to develop methods and means to minimize impacts of development projects on fish and wildlife resources, issues permits for activities that may impact fish habitat and maintains a catalogue of waters that salmon inhabit. The Subsistence Division compiles and analyse data and conducts research on subsistence fishing by Alaskans. Within each Division, administrative regions have been established. Staff at the regional offices provide administrative, biometric, computer hardware and software, research and management support to the area office staff. At the Division level, senior staff provide overall guidance to the regional staff in management, research and biometrics as well as providing statewide technical services, such as the Gene Conservation Laboratory and Coded Micro-wire Tag Laboratory. ADFG has an outstanding institutional building structure and function. The heart of the system is a structure where students can enter the Department as seasonal employees to gain field or laboratory experience as technicians. Upon graduation with a bachelors' (or higher) degree, entry level positions at the Biologist 1 or 2 level are employed in development positions to assist area management or research biologist. Fishery Biologist 3's are responsible for leading the management activities of the area office, supervising research programs at the area office, or for conducting specialized research at the regional level. Fishery Biologist 4's coordinate and supervises the overall management or research programs at the regional offices and in headquarters. The highest levels are statewide specialized positions such as the statewide Fishery Scientists for Salmon, Chief Biometrician and the Chief Fishery Scientist. In the management track, biologist can rise to be a Regional Supervisor, Deputy Director and Director. Educational and experience standards for all ADFG employees are maintained by the State's Department of Administration; the standards are rigorous and specific to help ensure that only appropriately educated and experienced people qualify for the professional and technical positions within the ADFG (see for example specifications for a Biometrician IV.¹³⁸	

¹³⁸ <https://www.governmentjobs.com/careers/alaska/classspecs/889586>

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

Current status:

There is evidence to substantiate that essential research for fishery management purposes is determined and carried out. This research generally includes routine stock(s) and ecosystem assessment reports. Assessors shall evaluate the specific stock assessment model/practices for each of the species under assessment and verify the technical appropriateness for use. For salmon, the assessors shall present and evaluate the methods for escapement goal development utilized to develop the annual escapement goals in Alaska (about 300). Statewide summary data for Alaska can be found in the annually released ADF&G document Summary of Pacific salmon escapement goals in Alaska with a review of escapements from [year] to [year]. The document generally presents the latest 9–10 years of salmon escapement performance in review.



EVIDENCE:

At the core of the ADFG's scientific program is a requirement for peer reviewed planning and reporting. Scientific research and applied stock assessment activities undertaken is rigorously reviewed at the area and regional level, and may also be reviewed at the headquarters level to ensure relevance to management and scientific rigor (Regnart and Swanton 2012). In Alaska, escapement goals are the primary management target. As such, establishing rigorous methods for setting and evaluating goals is a primary function of the technical staff. A through discussion of how escapement goals are set can be found in Clause 6.

Current status/Appropriateness/Effectiveness:



EVIDENCE:

Escapement goals undergo technical review every three years and policy review every three years by presenting the results at Board of Fish meetings, see for example Piston et al. (2024). This process ensures the goals are current, and appropriate

Each year ADFG produces a report that summarizes the Alaska's escapement goals, how those goals were determined and the estimated escapements for the last nine years. Munro (2024) provided the following summary of management's success in regulating fisheries so as to achieve the goals.

"In 2023 there were 257 salmon escapement goals in Alaska and 214 of the systems with escapement goals were successfully assessed for escapement ¹³⁹ (Table 2, Munro *in prep.*). Overall, 74% of the escapement goals were achieved or exceeded—up from 67% in 2022, and 4% greater than the previous 5-year average. Achievement of escapement goals in 2023 decreased for Chinook salmon, compared to 2022, remained about the same for sockeye salmon, and increased for coho, pink and chum salmon. A summary by species is as follows:

Chinook salmon—In 2023, 31% of the escapement goals were met for Chinook salmon compared to a recent high of 72% in 2019 and a 5-year average of 48%.

Sockeye salmon—Within Alaska, 91% of the sockeye salmon escapement goals were achieved in 2023 this was similar to 2022 (92%) and higher than the 5-year average of 85%.

Coho salmon—Achievement of escapement goals for coho salmon increased to 83% in 2023, compared to 59% in 2022. This achievement rate is higher than the recent 5-year average of 74% for coho salmon escapement goals

pink salmon—The percentage of pink salmon escapement goals met in 2023 was 86%, an increase from 2022 (75%) and higher than the 5-year average of 84%.

Chum salmon—For chum salmon, 73% of the escapement goals were met in 2023 (Figure 6), which is substantial increase compared to the 50% achieved in 2022 and continues the trend in improvement from the low of 44% in 2020."

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that an appropriate institutional framework is established to determine the applied research required and its proper use (i.e., assess and evaluate stock assessment models or practices) for fishery management purposes. Examples may include description of the overall process of research assessment and peer review, as well as stock and ecosystem assessment reports.



¹³⁹

https://omb.alaska.gov/html/performance/ABS/index_R143.html#:~:text=In%202023%2C%20there%20were%20257,50%25%20between%202020%20and%202022.

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

EVIDENCE:

As described earlier, there is a strong institutional framework (including organizational structure, statutes and policies) to determine and peer review the applied research needed to determine stock status, set spawning escapement goals and manage the fisheries so as to achieve those goals.

There is a wealth of reports regarding practices for setting goals (see for example Clark et al. (2014), Bernard et al. (2009), Carlson et al. (1999) Koenings and Burkett (1987).

There are reports for how escapement goals were determined for every region (see for example Piston and Fish (2024), Otis et al. (2023) Vega et al. (2022) and Morella et al. (2024)).

References:

- Bernard, D. R., J. J. Hasbrouck, B. G. Bue and R. A. Clark. 2009. Estimating risk of management error from precautionary reference points (PRPs) for non-targeted salmon stocks. Alaska Department of Fish and Game, Special Publication No. 09-09, Anchorage. <http://www.sf.adfg.state.ak.us/fedaidpdfs/SP09-09.pdf>
- Carlson, S. R., K. E. Tarbox, B. G. Bue. 1999. The Kenai Sockeye Salmon Simulation Model: A Tool for Evaluating Escapement and Harvest Levels. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report 2A99-08, Anchorage. <https://www.adfg.alaska.gov/FedAidPDFs/RIR.2A.1999.08.pdf>
- Clark, R. A., D. M. Eggers, A. R. Munro, S. J. Fleischman, B. G. Bue and J. J. Hasbrouck. 2014. An evaluation of the percentile approach for establishing sustainable escapement goals in lieu of stock productivity information. Alaska Department of Fish and Game, Fishery Manuscript No. 14-06, Anchorage. <http://www.adfg.alaska.gov/FedAidPDFs/FMS14-06.pdf>
- Koenings, J. P. and R. D. Burkett. 1987. Population characteristics of Sockeye Salmon (*Oncorhynchus nerka*) smolts relative to temperature regimes, euphotic volume, fry density, and forage base within Alaskan lakes. Pages 216– 234 [In] H. D. Smith, L. Margolis and C. C. Wood, editors. Sockeye Salmon (*Oncorhynchus nerka*) population biology and future management. Canadian Special Publications of Fisheries and Aquatic Science No. 96, Ottawa. http://publications.gc.ca/collections/collection_2016/mpo-dfo/Fs41-31-96-eng.pdf
- Morella, J. R., R. M. Ertz, J. W. Erickson, J. W. Savereide, A. N. Matter, and T. R. McKinley. 2024. Escapement goal review of Copper and Bering Rivers, and Prince William Sound Pacific salmon stocks, 2024. Alaska Department of Fish and Game, Fishery Manuscript No. 24-03, Anchorage. <https://www.adfg.alaska.gov/FedAidPDFs/FMS24-03.pdf>
- Morella, J. R., R. M. Ertz, J. W. Erickson, J. W. Savereide, A. N. Matter, and T. R. McKinley. 2024. Escapement goal review of Copper and Bering Rivers, and Prince William Sound Pacific salmon stocks, 2024. Alaska Department of Fish and Game, Fishery Manuscript No. 24-03, Anchorage. <https://www.adfg.alaska.gov/FedAidPDFs/FMS24-03.pdf>
- Munro, A.R. 2024. Summary of Alaska's 2023 Pacific salmon escapement and commercial harvest. NPAFC Doc. 2152. 13 pp. Alaska Department of Fish and Game. <https://npafc.org>
- Otis, E. O., J. W. Erickson, M. D. Booz, and T. McKinley. 2023. A review of escapement goals for salmon stocks in Lower Cook Inlet, Alaska, 2023. Alaska Department of Fish and Game, Fishery Manuscript No. 23-02, Anchorage. <https://www.adfg.alaska.gov/FedAidPDFs/FMS23-02.pdf>
- Piston, A. W., and T. M. Fish. 2024. Pink salmon stock status and escapement goals in Southeast Alaska through 2023. Alaska Department of Fish and Game, Special Publication No. 24-16, Anchorage. <https://www.adfg.alaska.gov/FedAidPDFs/SP24-16.pdf>

5.1.	An appropriate institutional framework shall be established to determine the applied research required and its proper use (i.e., assess/evaluate stock assessment model/practices) for fishery management purposes.		
	Priest, J. T., A. W. Piston, J. V. Nichols, E. L. Jones III, P. J. Richards, J. A. Bednarski, B. W. Elliott, and S. E. Miller. 2024. Review of salmon escapement goals in Southeast Alaska, 2024. Alaska Department of Fish and Game, Fishery Manuscript No. 24-04, Anchorage. https://www.adfg.alaska.gov/FedAidPDFs/FMS24-04.pdf Regnart, J. and C. O. Swanton. 2012. Operational planning, policies and procedures for ADF&G fisheries research and data collection projects. Alaska Department of Fish and Game, Special Publication No. 12-13, Anchorage. http://www.adfg.alaska.gov/FedAidpdfs/SP12-13.pdf Vega,L., J. M. Head, T. Hamazaki, J. W. Erickson, and T. R. McKinley. 2022. Review of salmon escapement goals in Bristol Bay, Alaska, 2021. Alaska Department of Fish and Game, Fishery Manuscript Series No. 22-07, Anchorage. https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2022-2023/bb/FMS22-07.pdf		
Numerical score:	Starting score 10	Number of EPs <u>NOT</u> met 0	Overall score 10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Full Conformance
Non-conformance Number (if applicable):			

9.3.2.2 Supporting Clause 5.1.1.

5.1.1.	Less elaborate stock assessment methods are frequently used for small-scale or low-value capture fisheries resulting in greater uncertainty about the status of the <i>stock under consideration</i> . A more precautionary approach to managing fisheries on such resources shall be required, including, where appropriate, a lower level of resource utilization. A record of good management performance may be considered as supporting evidence of the adequacy of the management system.		
Relevance:	Not Relevant Because there are no small-scale or low value commercial salmon fisheries in Alaska this clause is not relevant.		
Evaluation Parameters			Met?
Process: <i>There is a process that allows more precautionary approaches to managing fisheries (e.g., lower exploitation rates) on resources assessed through stock assessment methods that result in greater uncertainty about the state of the stock under consideration.</i>			☐
EVIDENCE:			
Current status/Appropriateness/Effectiveness: <i>There is evidence that precautionary approaches are applied to managing fisheries (e.g., lower exploitation rates) on resources assessed through stock assessment methods that result in greater uncertainty about the state of the stock under consideration.</i>			☐
EVIDENCE:			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that with less elaborate stock assessment methods frequently used for small-scale or low-value capture fisheries, more precautionary approaches to managing fisheries on such resources are required, including where appropriate, lower level of resource utilization. Examples may include stock assessment reports and other data.</i>			☐
EVIDENCE:			
References:			
Numerical score:	Starting score 10	– (Number of EPs <u>NOT</u> met x 3) =	Overall score NR
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			
Non-conformance Number (if applicable):			

9.3.2.3 Supporting Clause 5.1.2.

5.1.2	The fisheries management organization shall ensure that appropriate research is conducted into all aspects of fisheries including biology, ecology, technology, environmental science, economics, and fishery enhancement. Analysis results shall be distributed in a timely and readily understandable fashion in order that the best scientific evidence available contributes to fisheries conservation, management, and development. The fisheries management organization shall also ensure the availability of research facilities and provide appropriate training, staffing, and institution building to conduct the research.
Relevance:	Relevant
Evaluation Parameters	
Process: <i>There are organizations and processes in place to permit research into the aspects of fisheries listed in the clause.</i>	
EVIDENCE:	
The conduct of diverse research concerning salmon is a collaborative effort of numerous state and federal agencies. ADFG supports a wide breath of research, including: - The Commercial Fisheries Division maintains programs that research effects of enhancement, ecology, stock assessment, genetics, pathology, and maintains several critical databases including; the value of salmon harvested, genetic profiles, otolith anatomy, coded wire tags and disease incidence that are used in collaboration with and number of agencies. - The Division of Subsistence researches the history and current use of salmon for subsistence. - The Sport Fish Division studies biology, ecology, and economics of recreational fishing. It also conducts stock assessments and makes recommendations on escapement goals. The State of Alaska, supports diverse biological, social and economic research in institutions other than ADFG, including: - The University of Alaska has an extensive undergraduate and graduate program on a broad array of topics including quantitative stock assessment, biology, enhancement, genetics, behavioral ecology. The University also offers associate degrees and certificates in fisheries technology at facilities located in Juneau, Seward, Kodiak and Fairbanks. The University of Alaska Institute of Social and Economic Research conducts research on the economics of Alaska's fisheries. - The Kodiak Marine Science and Seafood Center researches the biochemistry and nutritional value of seafood and various ecological issues. - The Alaska Seafood Marketing Institute contracts studies to determine the value of Alaska's Seafood Industry. - The Commercial Fishery Entry Commission publishes research on the optimum number of permits that should be issued for a fishery. Federal Agencies and the University of Washington's Alaska Salmon Program support varied research, including: - The University of Washington maintains three field stations in Alaska to study a broad array of topics in biology and ecology relating to management of salmon while training undergraduate and graduate students. - The USFWS augments state stock assessment by conducting research on salmon production and habit on federal lands. - The U.S Forest Service, U.S. Park Service and U.S. Bureau of Land Management perform fisheries research projects and activities associated with the management of federal lands and subsistence fisheries management.	
Current status/Appropriateness/Effectiveness: <i>Research is conducted into the following aspects of the fisheries: biology, ecology, technology, environmental science, economics, and aquaculture. The described types of research carried out shall result in the fishery being deemed compliant with this evaluation parameter.</i>	
EVIDENCE: The types of research outlined above and the evidence of such research documented below is sufficient to meet the requirement of being compliant with this parameter.	

5.1.2	The fisheries management organization shall ensure that appropriate research is conducted into all aspects of fisheries including biology, ecology, technology, environmental science, economics, and fishery enhancement. Analysis results shall be distributed in a timely and readily understandable fashion in order that the best scientific evidence available contributes to fisheries conservation, management, and development. The fisheries management organization shall also ensure the availability of research facilities and provide appropriate training, staffing, and institution building to conduct the research.

Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that States are conducting appropriate research into the following aspects of the fisheries: biology, ecology, technology, environmental science, economics, and aquaculture. The research is disseminated accordingly. States also ensure the availability of research facilities and provide appropriate training, staffing, and institution building to conduct the research. Examples may include stock assessment, economic value, fleet reports, and other reports.</i>	X

EVIDENCE: As demonstrated below this clause is met because: • There is a large quantity of quality research conducted on Alaska salmon by a multitude of institutions. • The results of this research is easily available. • There are extensive research facilities at ADFG and other institutions • Training is available at University of Alaska facilities Examples of the ADFG research on technology is Burwen et al. (2010), on genetics is, Barclay et al. (2024) and Habicht (2019), on pathology in support of enhancement is Purcell et al. (2018), on ecology is Loewen and Baechler (2014), on population dynamics is Matter and Tyers (2019). The Sport Fish Division has published reports on the value of recreational fishing Southwick et al. (2008). Examples of The Division of Subsistence research on the history, social-economic values and current use of salmon for subsistence Sill et al. (2019). An example of the Alaska Seafood Marketing Institute supported research on economics is McDowell (2017). An example of the University of Alaska Institute of Social and Economic Research on economics is Knapp (2011). An example of the Commercial Fishery Entry Commission research on the optimum number of permits that should be issued for a fishery is Schelle <i>et al.</i> (2004). Examples of the University of Alaska research in ecology are Adkison (2010), Feddern et al. (2024), Woodward et al. (2025). Examples of research conducted at the University of Washington on salmon are Clark <i>et al.</i> (2015), Lincoln et al. (2020) and Roe et al (2924). Examples of the National Marine Fisheries Service Auke Bay Laboratory research include: Murphy <i>et al.</i> (2017) on early marine life history of salmon; Kondezla et al. (2016) and Guthrie et al. (2021) on genetics and stock identification and on environmental science Farrow <i>et al.</i> (2016). An example of the research conducted by the USFWS on the use of Radio tags to estimate Chinook abundance is Tanner and Sethi (2014) and on genetics and stock structure of Yukon Coho Salmon Flanery et al. (Research by the U.S Geological Survey is seeking to determine the cause-and-effect relationships between <i>Ichthyophonus</i> infection prevalence and severity, water temperatures, and the swimming performance of Yukon River Chinook salmon.	

References:	Adkison, M. 2010. Models of the effects of marine-derived nutrients on salmon (<i>Oncorhynchus</i> spp.) population dynamics Canadian Journal of Fisheries and Aquatic Sciences.67(1). https://www.researchgate.net/publication/237153378
	Barclay, A. W. 2024. Genetic stock composition estimates for the Upper Cook Inlet sockeye salmon commercial fishery, 2021-2023_ (PDF 2,974 kB) Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Information Report No. 5J24-02, Anchorage. https://www.adfg.alaska.gov/index.cfm?adfg=fishinggeneconservationlab.publications_scientificjournals

5.1.2 The fisheries management organization shall ensure that appropriate research is conducted into all aspects of fisheries including biology, ecology, technology, environmental science, economics, and fishery enhancement. Analysis results shall be distributed in a timely and readily understandable fashion in order that the best scientific evidence available contributes to fisheries conservation, management, and development. The fisheries management organization shall also ensure the availability of research facilities and provide appropriate training, staffing, and institution building to conduct the research.

Burwen, D. L., S. J. Fleischman and J. D. Miller. 2010. Accuracy and precision of manual fish length measurements from DIDSON sonar images. Transactions of the American Fisheries Society, 139:1306-1314. <https://www.tandfonline.com/doi/abs/10.1577/T09-173.1>

Clark, S.C., T.L. Tanner, S.A. Sethi, K.T. Bentley and D.E. Schindler. 2015. Migration timing of adult Chinook Salmon into the Togiak River, Alaska, watershed: is there evidence for stock structure? Transactions of the American Fisheries Society 144: 829-836. <https://www.tandfonline.com/doi/abs/10.1080/00028487.2015.1031281>

Feddern, ML, R Shaftel, ER Schoen, CJ Cunningham, BM Connors, ... (Body size and early marine conditions drive changes in Chinook salmon productivity across northern latitude ecosystems. Global Change Biology 30 (10), e17508. <https://pubmed.ncbi.nlm.nih.gov/39377278/>

Flannery BG, Loges RG, Wenburg JK. 2022. Microsatellite Variation in Yukon River Coho Salmon: Population Structure and Application to Mixed-Stock Analysis. North American Journal of Fisheries Management 41, 1408-1422. <https://www.fws.gov/node/268043>

Guthrie III, M, Hv. T. Nguyen, C. L. D'Amelio, K. Karpan, P. D. Barry, and W. A. Larson. 2024. Genetic Stock Composition Analysis of Chinook Salmon (*Oncorhynchus tshawytscha*) Bycatch Samples from the 2020 Bering Sea Pollock Trawl Fisheries. National Oceanic and Atmospheric Administration National Marine Fisheries Service NOAA Technical Memorandum NMFS-AFSC-446. <https://repository.library.noaa.gov/view/noaa/45362>

Habicht, C., C. T. Smith, A. Barclay, H. Hoyt, K. Turnquist and W. A. Larson. 2019. Discriminating among Pacific salmon, Rainbow Trout, and Atlantic Salmon species using commonly available genetic screening methods. Journal of Fish and Wildlife Management. <https://www.fwspubs.org/doi/pdf/10.3996/052018-JFWM-038>

Knapp, G. 2011. Local permit ownership in Alaska salmon fisheries. Marine Policy 35(5) pgs. 658-666. <https://www.semanticscholar.org/paper/Local-permit-ownership-in-Alaska-salmon-fisheries-Knapp/11585d74a42c486c4fc9d62e970552f1f486fbc9>

Kondzela, C. M., J. A. Whittle, D. Yates, S. C. Vulstek, H. T. Nguyen and J. R. Guyon. 2016. Genetic stock composition analysis of Chum Salmon from the prohibited species catch of the 2014 Bering Sea Walleye Pollock trawl fishery and Gulf of Alaska groundfish fisheries. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-314,p. U.S. Dep. Commer., NOAA-TM-AFSC-314, 49 p. <https://www.afsc.noaa.gov/Publications/AFSC-TM/NOAA-TM-AFSC-314.pdf>

Lincoln, A.E., R. Hilborn, A.J. Wirsing, and T.P. Quinn. 2020. Managing salmon for wildlife: Do fisheries limit salmon consumption by bears in small Alaskan streams? Ecological Applications <https://pubmed.ncbi.nlm.nih.gov/31863535/>

Loewen, M., and N. Baechler. 2014. The 2014 Chignik River Sockeye Salmon smolt outmigration: an analysis of the population and lake rearing conditions. Alaska Department of Fish and Game, Fishery Data Series No. 15-02, Anchorage. <http://www.adfg.alaska.gov/FedAidPDFs/FDS15-02.pdf>

5.1.2 The fisheries management organization shall ensure that appropriate research is conducted into all aspects of fisheries including biology, ecology, technology, environmental science, economics, and fishery enhancement. Analysis results shall be distributed in a timely and readily understandable fashion in order that the best scientific evidence available contributes to fisheries conservation, management, and development. The fisheries management organization shall also ensure the availability of research facilities and provide appropriate training, staffing, and institution building to conduct the research.

Matter, A. N., and M. Tyers. 2019. Chinook Salmon escapement in the Chena and Salcha Rivers and Coho salmon escapement in the Delta Clearwater River, 2019-2023. Alaska Department of Fish and Game, Regional Operational Plan ROP.SF.3F.2019.03, Anchorage.

<http://www.adfg.alaska.gov/FedAidPDFs/ROP.SF.3F.2016.07.pdf>

McDowell Group. 2015. The economic value of Alaska's seafood industry. 3960 Glacier Hwy. Suite 201. Juneau. <https://www.mcdowellgroup.net/wp-content/uploads/2017/10/ak-seafood-impacts-sep2017-final-digital-copy.pdf>

Murphy, J., K. Howard, J. Gann, K. Ciciel, W. Templin and C. Gutherie III. 2017. Juvenile Chinook Salmon abundance in the Northern Bering Sea: Implications for future returns and fisheries in the Yukon River. Deep Sea research Part II: Topical Studies in Oceanography. Vol 135 Pgs 156-167. <https://www.sciencedirect.com/science/article/abs/pii/S0967064516301618>

Purcell, M., R. Powers, J. Evered, J. Kerwin, TR. Meyers, B. Stewart and JR. Winton. 2018. Molecular testing of adult Pacific salmon and trout (*Oncorhynchus spp.*) for several RNA viruses demonstrates widespread distribution of piscine orthoreovirus in Alaska and Washington. J Fish Dis. 41: 347-355. <https://pubmed.ncbi.nlm.nih.gov/29159930/>

Ro, H., J.H. Stern, A.J. Wirsing, and T.P. Quinn. 2024. Stable isotopes reveal variation in consumption of Pacific salmon by brown bears, despite ready access in small streams. Journal of Fish and Wildlife Management. https://www.researchgate.net/publication/353015347_Stable_Isotopes_Reveal_Variation_in_Consumption_of_Pacific_Salmon_by_Brown_Bears_Despite_Ready_Access_in_Small_Streams

Sill, L., G. Halas, D. Koster. 2019. Copper River Chinook salmon: the intersection of commercial fisheries and the subsistence way of life in Cordova, Alaska. ADF&G Division of Subsistence, Technical Paper No. 444. Juneau. <http://www.adfg.alaska.gov/techpap/TP444.pdf>

Schelle, K., K. Iverson, N. Free-Sloan and Carlson. 2004. Bristol Bay salmon drift gillnet fishery optimum number report. CFEC Report 04-3N. Juneau AK https://www.cfec.state.ak.us/RESEARCH/04_3N.htm

Southwick Associates Inc., W. J. Romberg, A. E. Bingham, G. B. Jennings and R. A. Clark. 2008. Economic impacts and contributions of sport fishing in Alaska, 2007. Alaska Department of Fish and Game, Professional Paper No. 08-01, Anchorage. <http://www.adfg.alaska.gov/FedAidpdfs/PP08-01.pdf>

Tanner, T. and S. Sethi. 2014. Estimation of Chinook Salmon escapement, distribution and run timing in the Togiak River watershed using radio telemetry, Togiak National Wildlife Refuge, Alaska, 2012. Alaska Fisheries Data Series Number 2014-11, October 2014 U.S. Fish and Wildlife Service. https://www.fws.gov/alaska/sites/default/files/pdfs/fisheries/data-series/d_2014_11.pdf

GA Woodard, DE Schindler, J Ohlberger, CJ Cunningham. 2025. Body size as a leading indicator of run size and application to in-season forecasting of sockeye salmon in Bristol Bay, Alaska. Canadian Journal of Fisheries and Aquatic Sciences 82, 1-8. <https://utoronto.scholaris.ca/server/api/core/bitstreams/12ce18aa-af4b-4ee9-840f-6cc67920bd4e/content>

5.1.2 The fisheries management organization shall ensure that appropriate research is conducted into all aspects of fisheries including biology, ecology, technology, environmental science, economics, and fishery enhancement. Analysis results shall be distributed in a timely and readily understandable fashion in order that the best scientific evidence available contributes to fisheries conservation, management, and development. The fisheries management organization shall also ensure the availability of research facilities and provide appropriate training, staffing, and institution building to conduct the research.

Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)									High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)									Full Conformance
Non-conformance Number (if applicable):									

9.3.2.4 Supporting Clause 5.2.

5.2.	There shall be established research capacity necessary to assess and monitor (1) the effects of climate or other environmental change on stocks and aquatic ecosystems, (2) the status of the stock under State jurisdiction, and (3) the impacts of ecosystem changes resulting from fishing activity, pollution, or habitat alteration.
Relevance:	Relevant
Evaluation Parameters	
Process:	
<i>There is a system that establishes the required research capacity needed to assess and monitor (1) the effects of climate or other environmental change on stocks and aquatic ecosystems; (2) the status of the stock under State jurisdiction; and (3) the impacts of ecosystem changes resulting from fishing activity, pollution, or habitat alteration. Please note that climate science is complex and evolving, and the system shall recognize the ability to assess and monitor these parameters over time.</i>	
Met?	
X	
EVIDENCE:	
The ADFG Divisions of Commercial and Sport Fisheries take the primary lead on determining the status of salmon stocks. Alaska's salmon stock assessment program is extensive and comprehensive. The program to determine the number caught and their composition is explained in Clause 4. Research capacity in environmental science is also discussed in Clause 5.1.2. The program to estimate escapements and to set goals is explained in Clause 6. The Habitat Division performs research to monitor or evaluate the potential effects of development projects. ADF&G also maintains an ocean ecology program to understand the causes for early marine survival of salmonids, including climate effects. The Sport Fish Division strategic plan prioritizes habitat research. The Sport Divisions also includes programs related to the effects of climate change, changes in sea level and marine and freshwater temperatures, frequency of storm events, rapid loss of coastal glaciers and coastal uplift. When evaluating stock status, ADFG research staff have access to a wealth of data collected and analysed by a number of other state, federal and non-profit sources as described below.	
A primary goal of the North Pacific Anadromous Fish Commission's Science Plan is to understand variations in Pacific salmon productivity in a changing climate. Research objectives include: (1) improve knowledge of Pacific salmon distribution, growth and survival in the ocean (current status); (2) increase understanding of the causes of variations in Pacific salmon and steelhead trout production (mechanisms); and (3) anticipate future changes in the production of Pacific salmon and steelhead and the marine ecosystems	
The National Oceanic and Atmosphere Administration's (NOAA) Habitat Conservation Division (HCD) responsibilities include conducting and/or reviewing environmental analyses for a large variety of activities including commercial fishing, coastal development, transportation and energy projects. The HCD focuses on activities in habitats used by federally managed fish species located offshore, nearshore, in estuaries and in freshwater areas important to anadromous salmon. NOAA administers the Saltonstall-Kennedy grant program for fisheries research and development. NOAA also administers the Pacific Coastal Salmon Recovery Fund that was established by Congress to provide funding to states and tribes of the Pacific Coast Region to protect, restore, and conserve Pacific Salmon and steelhead populations and their habitats.	
Fish and Wildlife Service has recognized climate change as a potential driver in aquatic systems and supports research into the possible effects and finding ways to respond and adapt to the changes that are occurring.	
The North Pacific Research Board (NPRB)¹⁴⁰ distributes monies from the earnings of the Environmental Improvement and Restoration Fund, created by congress to "...conduct research activities on, or relating to the fisheries or marine ecosystems in the North Pacific Ocean, Bering Sea, and Arctic Ocean (including any lesser related bodies of water) [With]...priority on cooperative research efforts designed to address pressing fishery management or marine ecosystem information needs."	

¹⁴⁰ <https://nprb.org/>

5.2. There shall be established research capacity necessary to assess and monitor (1) the effects of climate or other environmental change on stocks and aquatic ecosystems, (2) the status of the stock under State jurisdiction, and (3) the impacts of ecosystem changes resulting from fishing activity, pollution, or habitat alteration.

The Bering Sea Integrated Ecosystem Research Program, a partnership between the NPRB and the National Science Foundation, funds research and ecosystem modelling to understand the impacts of climate change and dynamic sea ice cover on the eastern Bering Sea ecosystem.

The Gulf of Alaska Integrated Ecosystem Research Project seeks to understand how environmental and anthropogenic processes, including climate change, affect trophic levels and dynamic linkages among trophic levels, with emphasis on fish and fisheries, marine mammals and seabirds within the Gulf of Alaska. An example of research being conducted by the NPRB is understanding how climate is driving productivity of Yukon Chinook Salmon ¹⁴¹.

Current status/Appropriateness/Effectiveness:

There is evidence to demonstrate that there is sufficient research capacity in place to assess and monitor (1) the effects of climate or other environmental change on stocks and aquatic ecosystems, (2) the status of the stock under consideration, and (2) the impacts of fishing activity, pollution, or habitat alteration.

X

EVIDENCE:

The number, expertise, ongoing funding provided, and research publications of state and federal agencies involved in conducting research to assess and monitor (1) the effects of climate or other environmental change on stocks and aquatic ecosystems, (2) the status of Alaska's salmon stocks, and (3) the impacts of ecosystem changes resulting from fishing activity, pollution, or habitat alteration demonstrates that there is sufficient ongoing capacity.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there is established research capacity necessary to assess and monitor (1) the effects of climate or other environmental change on stocks and aquatic ecosystems, (2) the status of the stock under State jurisdiction, and (3) the impacts of ecosystem changes resulting from fishing activity, pollution, or habitat alteration. Examples may include stock, ecosystem, and habitat assessment reports.

X

EVIDENCE:

There are numerous examples of peer reviewed publications available online to demonstrate compliance with this clause, including the following:

Examples of ADFG's research on salmon stock status is shown in Clause 4. Examples of research in environmental science is discussed in Clause 5 the extensive reporting on to estimate escapements and to set goals is explained in Clause 6.

An example of ADFG's Habitat Division's research to evaluate the potential effects of development projects is Brewster (2016). The Sport Fish Division' strategic plan provides for "restoring fish impacts of development habitats from the and/or invasive species, for the benefit of fish and anglers. By conducting research on fish habitats and their use by species important to fisheries, the Division provides resulting information for ADF&G, other agencies, and the public to use for permitting, planning, and fisheries management" (ADFG-SF 2022). An example of the HCD focuses on activities in habitats is NOAA (2013).

An example of the U.S. Fish and Wildlife Service work on climate change is Prucha et al. (2013). An example of Alaska's Climate Research Canter's work to understanding potential impacts on aquatic systems is Wendler et al. (2015).

Examples of the research carried out by the NPAFC include a synopsis of research on production of salmon in a changing climate (Stanbury 2025).

References:

ADFG-SF. 2022. Alaska Dept. Fish and Game Division of Sport Fish strategic plan 2022-2027. ADFG. Juneau. https://www.adfg.alaska.gov/static/fishing/PDFs/sport/Strategic_Plan_2022.pdf

¹⁴¹ <https://nprb.org/project-search/#metadata/0944aa83-fbd0-43d3-87bf-9f5c30776df1/project>

5.2.	There shall be established research capacity necessary to assess and monitor (1) the effects of climate or other environmental change on stocks and aquatic ecosystems, (2) the status of the stock under State jurisdiction, and (3) the impacts of ecosystem changes resulting from fishing activity, pollution, or habitat alteration.									
	Brewster, B.P. 2016. Aquatic studies at the Kensington Gold Mine, 2015. ADFG Tech Rept. 16-03. Douglas AK. http://www.adfg.alaska.gov/static/home/library/pdfs/habitat/16_03.pdf NOAA. 2013. Biological characterization: An overview of Bristol, Nushagak, Kvichak Bays; essential fish habitat, process and species assemblages. NOAA, Ak Region. Anchorage, AK. https://www.fisheries.noaa.gov/resource/document/biological-characterization-overview-bristol-nushagak-and-kvichak-bays-essential Prucha, R., J. Leppi, S. McAfee and W. Loya. 2013. Development and application of an integrated hydrological model to study the effects of climate change on the Chutina watershed, Alaska. US https://www.arlis.org/docs/vol1/D/794294243.pdf Stanbury, W. (Editor). 2025. First workshop on developing a mechanistic understanding of the impact of a changing climate on salmon abundance and distribution trends. N. Pac. Anadr. Fish Comm. Tech. Rep. 23. 92 pp. https://doi.org/10.23849/npafctr23 Wendler, G, K. Galloway and M. Stuefer. 2015. On the climate and climate change of Sitka, Southeast Alaska. Theor.Appl.Clim.1-8. https://www.researchgate.net/publication/282539585_On_the_climate_and_climate_change_of_Sitka_Southeast_Alaska									
Numerical score:	Starting score – (Number of EPs <u>NOT</u> met x 3) = Overall score									
	10 0 10									
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)										High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)										Full Conformance
Non-conformance Number (if applicable):										

9.3.2.5 Supporting Clause 5.3.

5.3	Management organizations shall cooperate with relevant international organizations to encourage research in order to ensure optimum utilization of fishery resources.	
Relevance:	Relevant	
Process:	<i>There is cooperation or interaction between international organizations to ensure optimum utilization of resource.</i>	X
EVIDENCE:		
The State of Alaska participates in the two international organizations that support and encourage research on salmon in and around Alaska to ensure optimum utilization.		
The North Pacific Anadromous Fish Commission (NPAFC) is an international, inter-governmental organization established by the Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean. The member countries are Canada, Japan, Republic of Korea, Russian Federation and United States of America. To promote conservation and sustainability of anadromous stocks, the NPAFC conducts regular meetings and communications in the areas of fisheries enforcement and scientific research.		
The Pacific Salmon Treaty between Canada and the United States was signed in 1985 and established a Commission, Panels and Technical Committees to develop agreed fishing regimes, develop coordinated research programs, coordinate stock assessment programs, monitor performance and manage a Northern Fund to help support research and enhancement. The Commission and Panels meet three times a year. The treaty process provides for policy guidance by sanctioning Panels to address harvest management issues of shared stocks in each covered fishing area and for Joint Technical Committees to provide annual stock assessments.		
The Yukon River Panel was established as Attachment B, Annex IV, Chapter 8, Pacific Salmon Treaty to develop and implement agreed research and management programs for shared salmon resources of the Yukon River. The Yukon Panel acts independently from other annexes under the Pacific Salmon Treaty.		
Current status/Appropriateness/Effectiveness:	<i>There is evidence available to substantiate that such cooperation or interaction has taken place. There is data available that substantiates cooperation activities.</i>	X
EVIDENCE:		
There are regular meetings of the NPAFC. Records of these meetings can be found at https://npafc.org/ . There are regular meetings of the Pacific Salmon Commission and its technical committees. Records of their meetings and reports of their technical committees can be found at https://www.psc.org/ . Records of meeting of the Yukon Panel and its technical committee can be found at https://www.yukonriverpanel.com/ .		
Evidence Basis:	<i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that management organizations cooperate with relevant international organizations to encourage research in order to ensure optimum utilization of fishery resources. Examples may include outputs resulting from meetings or other research.</i>	X
EVIDENCE:		
There is an extensive library of documents available explaining the processes followed for both the NPAFC and PSC available on their web sites ¹⁴² . An example of the annual reports of the NPAFC is NPAFC (2022). An example of the annual reports of the PSC is PSC (2023). Likewise, there is an extensive library of technical documents, an example of PSC documents is PSC-JCTC (2024) and an example from the NPAFC is McKinnell et al. (2024)		

¹⁴² <https://npafc.org/> and <https://www.psc.org/>.

5.3	Management organizations shall cooperate with relevant international organizations to encourage research in order to ensure optimum utilization of fishery resources.				
References:	McKinnell, S., W. Stanbury, and V. Radchenko. 2024. Salmon in a Rapidly Changing World: Synthesis of the International Year of the Salmon and a Roadmap to 2030. N. Pac. Anadr. Fish Comm. Bull. 7. 93 pp. https://www.npafc.org/bulletin-7/ NPAFC. 2022 Annual Report for 2022. NPAFC Suite 502. West Pender St, Vancouver, B.C. VC 3B2 Canada. https://npafc.org Pacific Salmon Commission. 2023. <i>Thirty-Eighth Annual Report 2022/2023</i>. (https://www.psc.org/download/31/psc-annual-reports/15459/28th-psc-annual-report-2022-23.pdf). PSC-JCTC . 2024. Annual Report of Catch and Escapement for 2023. Pacific Salmon Commission, Vancouver, BC. https://www.psc.org/reports/tcchinook-24-01				
Numerical score:	Starting score		Number of EPs <u>NOT</u> met		Overall score
	10	- (	0	x 3) =	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)					High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)					Full Conformance
Non-conformance Number (if applicable):					

9.3.2.6 Supporting Clause 5.4.

5.4.	The fishery management organizations shall directly, or in conjunction with other States, develop collaborative technical and research programs to improve understanding of the biology, environment, and status of transboundary, shared, straddling, highly migratory and high seas stocks.		
Relevance:	Relevant		
Evaluation Parameters			
Process: <i>The collaborative technical and research programs to improve understanding of the biology, environment, and status of transboundary aquatic stocks have been developed.</i>			Met? X
EVIDENCE: As described in Clause 5.3 the Pacific Salmon Commission's Technical Committees, Yukon Panel Technical Committee and NPAFC develop collaborative technical and research programs to improve understanding of the biology, ecology and status of transboundary aquatic stocks.			
Current status/Appropriateness/Effectiveness: <i>There is evidence available to substantiate that such cooperation or interaction has taken place. There are data on collaborative programs to improve understanding of transboundary, shared, straddling, highly migratory or high seas stocks.</i>			☒
EVIDENCE: As described in Clause 5.3 the technical committees are very active and produce a large number of reports each year.			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organizations directly, or in conjunction with other States, have developed collaborative technical and research programs to improve understanding of the biology, environment, and status, of transboundary, shared, straddling, highly migratory or high seas stocks. Examples may include outputs resulting from meetings or other research.</i>			X
EVIDENCE: As described in Clause 5.3 there is an extensive library of technical reports their web sites ¹⁴³ .			
References:			
Numerical score:	Starting score	Number of EPs <u>NOT</u> met	Overall score
	10	0	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Full Conformance
Non-conformance Number (if applicable):			

¹⁴³ <https://npafc.org/> and <https://www.psc.org/>.

9.3.2.7 Supporting Clause 5.5.

5.5.	Data generated by research shall be analyzed and the results of such analyses published in a way that ensures confidentiality is respected, where appropriate.		
Relevance:	Relevant		
Evaluation Parameters			Met?
Process: <i>There is a process that allows analysis of research data, ensuring, where appropriate, their confidentiality.</i>			X
EVIDENCE: Alaska Statute 16.05.815 (Confidential Nature of Certain Reports and Records) requires strict confidentiality of an individual fisher's sales data. A fisher's data is protected and may not be released to the public. As a working rule, ADFG's policy is that if three or fewer fishers report sales within a time, area strata, the data will be redacted from public reports unless pooled into a larger stratum. There are processes in place to share data with other states through the Pacific States Marine Fisheries Commission (PSMFC) and with Canada through the Pacific Salmon Commission (PSC). The PSMFC maintains a coast-wide database of catch needed to interpret recoveries of coded micro-wire tags. A committee within the PSMFC composed of representatives of states, federal and tribal staff guide development and maintenance of the database in accordance with their respective agencies policies and regulations such as confidentiality. The PSC has established A Data Sharing Technical Committee to compile and evaluate stock assessment data also with representative of all participating agencies that ensures confidentiality is maintained.			
Current status/Appropriateness/Effectiveness: <i>There is evidence data was properly analyzed. Data was published respecting, where appropriate, confidentiality agreements. The rules of confidentiality are effectively respected.</i>			X
EVIDENCE: That confidentiality requirements are maintained is evident in the reports of the PSC and online data available through the PSMFC. These reports and databases only have aggregated catch data in large blocks of time and space such as an entire district's catch for a week. There are no individual records of sales in their data sets.			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that data generated by research is analyzed and the results of such analyses published in a way that ensures confidentiality is respected, where appropriate. Examples may include various data or reports.</i>			X
EVIDENCE: Evidence of maintaining strict confidentiality is often observed at Board of Fish meetings when a proposal seeks to place some kind of regulation on a small geographic location and the ADFG cannot release catch data because three or fewer fishermen have reported catches in that area, see for example Weiland et al. (2003). Evidence of the PSMFC efforts can be seen at their web site ¹⁴⁴ . The report of the PSC's Joint Committee on Data Sharing (PSC-JTCDS 1989) explains the process used and an example of the work completed as a result of data sharing is a report of the Chinook Technical Committee PSC-JCTC (2024).			
References:	PSC-TCDS. 1989. Information content and standards for a coastwide coded-wire tag database. PSC Report TCDS (89) 1. Vancouver, B.C. Canada. https://www.psc.org/publications/technical-reports/technical-committee-reports/data-sharing/ PSC-JCTC . 2024. Annual Report of Catch and Escapement for 2023. Pacific Salmon Commission, Vancouver, BC. https://www.psc.org/reports/tcchinook-24-01		

¹⁴⁴ <http://www.psmfc.org/program/regional-mark-processing-center-coded-wire-tag-rmpc?pid=17>)

5.5.	Data generated by research shall be analyzed and the results of such analyses published in a way that ensures confidentiality is respected, where appropriate.													
Numerical score:	Starting score		–		(		Number of EPs <u>NOT</u> met		x 3		) =		Overall score	
	10						0						10	
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)													High	
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)													Full Conformance	
Non-conformance Number (if applicable):														

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

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.

9.3.3.1 Supporting Clause 6.1.

6.1.	The fishery management organization shall establish safe target reference point(s) for management. Management targets are consistent with achieving maximum sustainable yield (MSY), a suitable proxy, or a lesser fishing mortality—if that is optimal in the circumstances of the fishery (e.g., multispecies fisheries) or is needed to avoid adverse impacts on dependent predators.		
Relevance:	Relevant		
Evaluation Parameters			Met?
Process:			
A target reference point(s) or proxy has been officially established. Managers shall be able to apply technical measures to reduce fishing pressure in the event that reference points are approached or exceeded.			X
EVIDENCE:			
Escapement goals are the primary reference points for Alaska salmon management. The Policy for Statewide Salmon Escapement Goals (5AAC 39.223) defines the types of escapements goals that may be established and the role of the ADFG and Board of Fisheries in setting and reviewing goals.			
The Policy for the Management of Sustainable Salmon Fisheries (AAC 39.222) sets out (among other things) that salmon fisheries shall be managed to allow escapements within ranges necessary to conserve and sustain potential salmon production and maintain normal ecosystem functioning.			
The Alaska Board of Fisheries has the authority under 5 AAC 39.200 to establish management plans that provide ADFG guidelines to be followed when making in-season management decisions regarding the state's subsistence, commercial, sport and personal use fisheries. The primary goal of these management plans is to protect the sustained yield of the state's fishery resources while at the same time providing an equitable distribution of the available harvest between various users.			
ADFG has the authority under Alaska Statute 16.05.060 to summarily open or close seasons or areas or to change weekly fishing periods by means of emergency regulatory orders in order to achieve escapement goals and implement management plans adopted by the Board of Fish.			
Current status/Appropriateness/Effectiveness:			
The official target reference point or proxy is consistent with achieving maximum sustainable yield (MSY), a suitable proxy, or a lesser fishing mortality—if that is optimal in the circumstances of the fishery (e.g., multispecies fisheries) or is needed to avoid severe adverse impacts on dependent predators (e.g. recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible). Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored. Furthermore, there is evidence that the target reference point/management target has been used as an objective by the management process. If there are historical instances of the reference point being approached or exceeded, managers have taken remedial action as appropriate. In the context of reference points, when data are insufficient to estimate reference points directly, other measures of productive capacity can serve as reasonable substitutes or proxies. Suitable proxies may include, for example, standardized Catch per Unit of Effort (CPUE) as a proxy for biomass; or specific levels of fishing mortality and biomass, which have proven useful in other fisheries, can be used with a reasonable degree of confidence in the absence of better-defined levels. It is important to note that the use of a proxy may involve additional uncertainty, and if so, should trigger extra precaution in setting biological reference points. For salmon, escapement goals are the equivalent of a target reference point proxy.			X
EVIDENCE:			

- 6.1. The fishery management organization shall establish safe target reference point(s) for management. Management targets are consistent with achieving maximum sustainable yield (MSY), a suitable proxy, or a lesser fishing mortality—if that is optimal in the circumstances of the fishery (e.g., multispecies fisheries) or is needed to avoid adverse impacts on dependent predators.**

The Policy for Statewide Salmon Escapement Goals (5AAC 39.223) defines the types of escapements goals that may be established as follows.

1. A Biological Escapement Goal (BEG) is defined as an escapement range that provides the greatest potential for maximum sustained yield. Once established, a BEG becomes the primary management objective unless the Board of Fisheries establishes an optimal escapement or in-river run goal. A BEG is developed with age specific data for a stock's catch and escapement over a series of years. Typically, a Ricker type stock – recruitment function is used to establish the BEG. ADFG seeks to maintain evenly distributed salmon escapements within the range.
2. A Sustained Escapement Threshold (SET) is defined as a threshold level of escapement below which the ability of the salmon stock to sustain itself is jeopardized. In practice, a SET can be estimated based on the lower range of historical escapement levels for which the salmon stock has consistently demonstrated the ability to sustain itself. A SET is lower than the lower bound of the BEG and lower than the lower bound of the SEG. A SET is established by the ADFG, in consultation with the Board of Fish, as needed, for salmon stocks of management or conservation concern.
3. A Sustainable Escapement Goal (SEG) is defined as a level of escapement, indicated by an index or a range of escapement estimates, that is known to have provided for sustained yield over a 5 to 10-year period. A SEG is used in situations where a BEG cannot be estimated because there is no stock-specific catch estimate. Once established, a SEG becomes the primary management objective unless an optimal escapement or in-river goal has been adopted by the BOF. A SEG is stated as a range that takes into account data uncertainty. ADFG seeks to maintain escapements within the bounds of the SEG.
4. In special circumstances, the Board of Fisheries may determine it is appropriate to establish an optimum escapement goal (OEG). If the board establishes an OEG, it must provide an explanation of the reasons, and with the assistance of the ADFG an estimate of expected differences in production relative to maximum sustained yield.
5. The Board of Fisheries may also establish an in-river escapement goal to provide for harvest in addition to escapement.

A variety of methods are used to develop escapement goals (Munro 2023). A brief description of each is summarized below. The most commonly used methods are listed first, followed by the less common methods.

1. Spawner-Recruit Analysis: Analysis of the relationship between the number of fish in the escapement and subsequent production of adults in the next generation. The Ricker type production model is almost exclusively used.
2. Percentile Method: This method is used for establishing sustainable escapement goals and contrasts observed annual escapements (largest escapement divided by smallest escapement) and the exploitation rate of a stock to select percentiles of observed escapements for estimating lower and upper bounds of the goal Clark et al. 2014).
3. Risk Analysis: Risks Analysis evaluates the magnitude of management error in future years around a precautionary reference point established using past observations of escapement (Bernard et al. 2009). This method is primarily used to guide establishment of a lower-bound SEG for non-targeted stocks of salmon.
4. Yield Analysis: Graphical or tabular examination of yields produced from observed escapement indices from which the escapement range with the greatest yields is identified (Hilborn and Walters 1992).
5. Theoretical Spawner-Recruit Analysis: This method is used in situations where there are few or no stock specific harvest estimates and/or age data. Information from nearby stocks, or about the species, are used in a spawner-recruit production model to estimate the number of spawners needed to achieve maximum sustained yield (Clark 2005).
6. Empirical Observation: Goals are based on observed escapements over time and may be calculated as the average escapement or the value of a low escapement for which there is evidence that the stock is able to recover (ADFG 2004).
7. Zooplankton Model: This model estimates the number of sockeye salmon smolts of a threshold or optimal size that a lake can support based upon measures of zooplankton biomass and surface area of the lake. Adult production is then estimated from marine survival rates over a range of smolt sizes (Koenings and Kyle 1997).
8. Spawning Habitat Model: Estimates of spawning capacity or number of spawners that produce maximum sustained yield (see for example Burgner et al. 1969).
9. Euphotic Volume Model: Measurement of the volume of a lake where sufficient light penetrates to support primary production is used to estimate sockeye salmon smolt biomass carrying capacity from which adult production is then estimated using marine survival rates (Koenings and Burkett 1987).
10. Lake Surface Area: Similar to spawning habitat models, the relationship between the lake surface area and escapement are used to estimate adult sockeye salmon production (Nelson 2006).

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11. Conditional Sustained Yield Analysis: Observed escapement indices and harvest are used to estimate if, on average, surplus production results from a particular goal range (Nelson et al. 2005). Estimated yields are conditioned on extreme values of measurement error in the escapement indices.
12. Brood Interaction Simulation Model: This model simulates production using a spawner–recruit relationship that modifies the simulated production for the year of return using an age-structured sub-model and estimates resulting catches and escapements under user-specified harvest strategies (Carlson et al. 1999). This is a hybrid of a theoretical SRA and yield analysis that has only been used to develop the escapement goal for Kenai River sockeye salmon.

Recognizing the variety of methods used and quality of data available to establish an escapement goal, ADFG developed a rating system to convey their confidence in each goal (Munro and Volk 2015).

1. The highest rating is given when accurate estimates of escapement (by age) and stock-specific catch (by age) are available to develop a BEG.
2. A good rating is given when fair to good accuracy and precision of estimates of escapement from mark-recapture experiments or multiple foot/aerial surveys and escapement and age estimates are available (but may have gaps) to develop a BEG or SEG.
3. A fair rating is given when fair to good accuracy of escapement estimates are available but some estimates are missing or inadequate, and age estimates are missing or incomplete, but sufficient data exists to estimate a sustainable escapement goal.
4. A poor rating is given when fair accuracy in escapement counts or index data (e.g., single foot/aerial survey) is available, but no harvest or age data is available to allow development of a SEG.

Escapement goals for a management area are reviewed every three years. In 2023 there were 257 escapement goals in the state.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that target reference points have been established and are consistent with achieving MSY, a suitable proxy, or a lesser fishing mortality—if that is optimal in the circumstances of the fishery (e.g., multispecies fisheries) or is needed to avoid severe adverse impacts on dependent predators. Examples may include stock assessment reports or fishery management plans.

X

EVIDENCE:

ADFG publishes a summary of statewide salmon escapement goals, the method used to establish those goals and the actual escapements in relation to those goals for the last nine years (Munro 2024). Bristol Bay Sockeye Salmon provide a good example of where goals have been set for individual stocks (Vega et al. 2022). In cases where catches cannot be assigned to a stock, an escapement goal for a group of stocks in a management area may be developed. A good example of where an escapement goal has been set for a geographic area is for pink salmon in Southeast Alaska (Piston and Fish 2024).

Munroe (2024) reported the following:

“In 2023 there were 257 salmon escapement goals in Alaska and 214 of the systems with escapement goals were successfully assessed for escapement (Table 2, Munro in prep.). Overall, 74% of the escapement goals were achieved or exceeded—up from 67% in 2022, and 4% greater than the previous 5-year average. Achievement of escapement goals in 2023 decreased for Chinook salmon, compared to 2022, remained about the same for sockeye salmon, and increased for coho, pink and chum salmon. A summary by species is as follows:

Chinook salmon—In 2023, 31% of the escapement goals were met for Chinook salmon compared to a recent high of 72% in 2019 and a 5-year average of 48%.

6.1. The fishery management organization shall establish safe target reference point(s) for management. Management targets are consistent with achieving maximum sustainable yield (MSY), a suitable proxy, or a lesser fishing mortality—if that is optimal in the circumstances of the fishery (e.g., multispecies fisheries) or is needed to avoid adverse impacts on dependent predators.

Sockeye salmon—Within Alaska, 91% of the sockeye salmon escapement goals were achieved in 2023 this was similar to 2022 (92%) and higher than the 5-year average of 85%.

Coho salmon—Achievement of escapement goals for coho salmon increased to 83% in 2022, compared to 59% in 2022. This achievement rate is higher than the recent 5-year average of 74% for coho salmon escapement goals.

Pink salmon—The percentage of pink salmon escapement goals met in 2023 was 86%, an increase from 2022 (75%) and higher than the 5-year average of 84%.

Chum salmon—For chum salmon, 73% of the escapement goals were met in 2023 (Figure 6), which is substantial increase compared to the 50% achieved in 2022 and continues the trend in improvement from the low of 44% in 2020.”

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6.1. The fishery management organization shall establish safe target reference point(s) for management. Management targets are consistent with achieving maximum sustainable yield (MSY), a suitable proxy, or a lesser fishing mortality—if that is optimal in the circumstances of the fishery (e.g., multispecies fisheries) or is needed to avoid adverse impacts on dependent predators.

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Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10		(	0		3	)		10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)									High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)									Full Conformance
Non-conformance Number (if applicable):									

9.3.3.2 Supporting Clause 6.2.

6.2.	The fishery management organization shall establish appropriate limit reference point(s) for exploitation (i.e., consistent with avoiding recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible; Appendix 1, Part 1). When a limit reference point is approached, measures shall be taken to ensure that it will not be exceeded. For instance, if fishing mortality (or its proxy) is above the associated limit reference point, actions should be taken to decrease the fishing mortality (or its proxy) below that limit reference point.
Relevance:	Relevant
Evaluation Parameters	
Process: <i>A scientifically based limit reference point or proxy has been officially established, and together with the measure to be taken, ensures the reference point(s) will not be exceeded.</i>	
Met?	
EVIDENCE: Alaska's escapement goals (whether BEGs, SEGs, or OEGs) are routinely established as a range (see Clause 6.1). All fisheries must, by regulation (5AAC 39.222) be managed to provide escapements that are above the lower end of the escapement goal range. The escapement goal strategy is precautionary because it seeks to curtail fishing when annual salmon runs periodically fall below levels where minimum escapement goal targets can be achieved. Management for spawning escapements consistent with sustained high levels of production generally protect populations from critical low levels that potentially reduce diversity, resilience and future production to the point of appreciable risk of impairing reproductive capacity. Thus, management for these target reference points provides an operational equivalent of a limit reference point in salmon management systems by effectively avoiding lower escapements to the extent that this is possible by regulating fisheries. Specific Limit reference points have not been adopted for Alaska salmon because target reference points generally function to avoid low escapements where recruitment might be significantly impaired. Alaska's Sustainable Salmon Fisheries Policy (5AAC 39.222) defines a Sustained Escapement Threshold (SET) as a threshold level of escapement below which the ability of the salmon stock to sustain itself is jeopardized. However, Alaska has not established a methodology for identifying a SET and the assessment team is unaware of any instances where a SET was adopted. In a few cases, Alaska has established Sustainable Escapement Goal Thresholds (SEGT) which are lower bound target reference points established as minimum goals without a corresponding upper end goal. SEGTS are not equivalent to SEGs.	
Current status/Appropriateness/Effectiveness: <i>The stock under assessment shall not currently be overfished (see glossary) according to the best scientific evidence available. The stock is currently estimated to be on the sustainable side of this reference point (e.g., spawning stock biomass is above the limit reference point, F is below F_{lim}, etc.). F_{lim} shall not exceed F_{msy}. The limit reference point or proxy is consistent with avoiding recruitment overfishing and other severe negative impacts on the stock. There are mechanisms in place (e.g., harvest control rule or mechanism) to ensure that the level of fishing pressure is reduced if the limit reference point is approached or reached, and these mechanisms are consistent with ensuring to a high degree of certainty that the limit reference point will not be exceeded, and that actions are taken to decrease the fishing mortality (or its proxy) below that limit reference point. The level of B_{lim} should be set on the basis of historical information, applying an appropriate level of precaution according to the reliability of that information. In addition, an upper limit should be set on fishing mortality, F_{lim}, which is the fishing mortality rate that, if sustained, would drive biomass down to the B_{lim} level. It is important to clarify that for salmon, spawning escapement goals are a suitable proxy for the intent of this clause. Escapement goal performance over a 4- to 5-year period shall be considered a suitable minimum reference point for salmon management. Specific to this point, underperforming salmon stocks that do not meet their escapement goals for a sustained period (over 4–5 years) shall be appropriately managed within the stock of concern framework by the State of Alaska to ensure stocks are managed with the objective of returning them to safe biological targets.</i>	
☒	
EVIDENCE: The ADFG publishes a summary of statewide salmon escapement goals, the method used to establish those goals and the actual escapements in relation to those goals for the last ten years (Munro 2024). Bristol Bay Sockeye Salmon provide a good example of where goals have been set for individual stocks (Vega et al. 2022). In cases where catches cannot be assigned to a stock, an	

6.2. The fishery management organization shall establish appropriate limit reference point(s) for exploitation (i.e., consistent with avoiding recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible; Appendix 1, Part 1). When a limit reference point is approached, measures shall be taken to ensure that it will not be exceeded. For instance, if fishing mortality (or its proxy) is above the associated limit reference point, actions should be taken to decrease the fishing mortality (or its proxy) below that limit reference point.

escapement goal for a group of stocks in a management area may be developed. A good example of where an escapement goal has been set for a geographic area is for pink salmon in Southeast Alaska (Piston and Fish 2024).

Munroe (2024) reported the following:

“In 2023 there were 257 salmon escapement goals in Alaska and 214 of the systems with escapement goals were successfully assessed for escapement (Table 2, Munro in prep.). Overall, 74% of the escapement goals were achieved or exceeded—up from 67% in 2022, and 4% greater than the previous 5-year average. Achievement of escapement goals in 2023 decreased for Chinook salmon, compared to 2022, remained about the same for sockeye salmon, and increased for coho, pink and chum salmon. A summary by species is as follows:

Chinook salmon—In 2023, 31% of the escapement goals were met for Chinook salmon compared to a recent high of 72% in 2019 and a 5-year average of 48%.

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Pink salmon—The percentage of pink salmon escapement goals met in 2023 was 86%, an increase from 2022 (75%) and higher than the 5-year average of 84%.

Chum salmon—For chum salmon, 73% of the escapement goals were met in 2023 (Figure 6), which is substantial increase compared to the 50% achieved in 2022 and continues the trend in improvement from the low of 44% in 2020.”

Among other things, the Sustainable Salmon Policy (5 AAC 39.222) requires fisheries be managed in a precautionary manner to allow escapements within ranges necessary to conserve and sustain potential salmon production and maintain normal ecosystem functioning as follows:

1. Salmon spawning escapements should be assessed both temporally and geographically; escapement monitoring programs should be appropriate to the scale, intensity, and importance of each salmon stock's use.
2. Salmon escapement goals, whether sustainable escapement goals, biological escapement goals, optimal escapement goals, or in-river run goals, should be established in a manner consistent with sustained yield; unless otherwise directed, the department will manage Alaska's salmon fisheries, to the extent possible, for maximum sustained yield.
3. Salmon escapement goal ranges should allow for uncertainty associated with measurement techniques, observed variability in the salmon stock measured, changes in climatic and oceanographic conditions, and varying abundance within related populations of the salmon stock measured.
4. Salmon escapement should be managed in a manner to maintain genetic and phenotypic characteristics of the stock by assuring appropriate geographic and temporal distribution of spawners as well as consideration of size range, sex ratio, and other population attributes.

Alaska's sustainable salmon fishery policy (5 AAC 39.222) requires ADFG to report to the BOF any salmon stock that has chronically failed to meet its escapement goal. The policy defines three levels of concern with yield being the lowest level of concern.

1. Yield Concern: A stock of yield concern is defined as "a concern arising from a chronic inability, despite the use of specific management measures, to maintain specific yields or harvestable surpluses above a stock's escapement needs.
2. Management Concern: A stock of management concern is defined as "a concern arising from a chronic inability, despite the use of specific management measures, to maintain escapements for a salmon stock within the bounds of the SEG, BEG, OEG, or other specified management objectives for the fishery.

6.2. The fishery management organization shall establish appropriate limit reference point(s) for exploitation (i.e., consistent with avoiding recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible; Appendix 1, Part 1). When a limit reference point is approached, measures shall be taken to ensure that it will not be exceeded. For instance, if fishing mortality (or its proxy) is above the associated limit reference point, actions should be taken to decrease the fishing mortality (or its proxy) below that limit reference point.

3. Conservation Concern: A stock of conservation concern is defined as “a concern arising from a chronic inability, despite the use of specific management measures, to maintain escapements for a stock above a sustained escapement threshold (SET).

Chronic inability is defined as "the continuing or anticipated inability to meet expected yields over a 4 to 5-year period." This designation allows the BOF and ADF&G to develop specific management measures to prevent fishing activity from allowing rebuilding to sustainable levels. The action plans contain goals, measurable and implementable objectives, and provisions for fishery management actions needed to achieve rebuilding. Also included are performance measures appropriate for monitoring and gauging the effectiveness of the action plan, and as deemed appropriate, a research plan. There are 23 stocks of concern (Table 15). Nineteen stocks have been identified as a management concern and two have been identified as a yield concern. Two new stocks were added in 2024/25 and three stocks met goals and were de-listed.

Table 15. Stocks of concern. (Source:Munro , 2024)

Region	Stock	Species	Year Designated	Level of Concern
Southeast	King Salmon River	Chinook	2017	Management
	Stikine River	Chinook	2021	Management
	Andrew Creek	Chinook	2021	Management
	Taku River	Chinook	2021	Management
	McDonald Lake	Sockeye	2021	Management
	Hugh Smith	Sockeye	2025	Management
	N. SEAK Outside Subregion	Chum	2025	Management
Central	McNeil River	Chum	2016	Management
	Chuitna River	Chinook	2010	Management
	Theodore River	Chinook	2010	Management
	Alexander Creek	Chinook	2010	Management
	Nushagak	Chinook	2022	Management
	East Susitna River	Chinook	2019	Management
	Kenai River Late Run	Chinook	2023	Management
AYK	Mikfik Lake	Sockeye	2023	Management
	Yukon	Chinook	2000	Yield
	Norton Sound Sub Dist. 5 & 6	Chinook	2003	Yield
	Karluk	Chinook	2010	Management
Westward	Ayakulik	Chinook	2019	Management
	Chignik River - early run	Sockeye	2021	Management
	Chignik River	Chinook	2023	Management

This assessment further considered the adequacy of Alaska’s use of escapement goal-based TRPs as an operational equivalent of a LRP by examining stock status in relation to proxy values for LRPs identified for the purposes of this assessment as 50% of the lower bound of the escapement goal range. The Assessment Team identified this value based on normal stock-recruitment curve descriptions for salmon which indicate that the point of significant reproductive impairment is substantially lower than escapement values consistent with high sustained yields upon which Alaska salmon escapement goal ranges are based. A proxy of 50% of the lower range goal was selected because goal ranges for Alaska salmon stocks typically bracket escapements that produce sustained or maximum sustained yields. This evaluation determined that population-specific LRP proxies were exceeded more than 90% of the

6.2. The fishery management organization shall establish appropriate limit reference point(s) for exploitation (i.e., consistent with avoiding recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible; Appendix 1, Part 1). When a limit reference point is approached, measures shall be taken to ensure that it will not be exceeded. For instance, if fishing mortality (or its proxy) is above the associated limit reference point, actions should be taken to decrease the fishing mortality (or its proxy) below that limit reference point.

time from 2007-2021 for salmon stocks in Alaska (Table 16). Therefore, management for target reference points provides an effective operational equivalent of a limit reference point in salmon management systems by effectively avoiding lower escapements to the extent that this is possible by regulating fisheries.

Table 16. Frequencies with which spawning escapements exceed proxy limit reference points for Alaska salmon, 2007-2021*.

Unit of Assessment	Chinook	Chum	Coho	Pink	Sockeye	All
Southeast	93%	92%	99%	100%	89%	94%
Yakutat	90%		97%	100%	89%	92%
Copper/Bering	100%		100%		98%	99%
Prince William Sound		92%		96%	95%	94%
Lower Cook Inlet	100%	91%		89%	97%	92%
Upper Cook Inlet	89%	100%	94%		100%	93%
Kodiak	73%	100%	96%	97%	94%	93%
Chignik	100%	100%		87%	97%	96%
AK Peninsula	93%	94%	100%	79%	94%	93%
Bristol Bay	100%	100%	100%	100%	100%	100%
Kuskokwim	90%	96%	100%		100%	94%
Yukon	100%	87%	80%			92%
Norton Sound	73%	89%	100%	100%	85%	89%
Kotzebue Sound		100%				100%
All	91%	92%	97%	93%	95%	94%

*Proxy values for LRPs are Identified for the purposes of this reassessment as 50% of low bound of the escapement goal range.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are established safe limit reference point(s) for exploitation (i.e., consistent with avoiding recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible). When a limit reference point is approached, measures are taken to ensure that it will not be exceeded. For instance, if fishing mortality (or its proxy) is above the associated limit reference point, actions are taken to decrease the fishing mortality (or its proxy) below that limit reference point. Examples may include stock assessment reports or fishery management plans.

X

EVIDENCE:

Management Plans are developed by the Board of Fish and ADFG to guide ADFG's in-season management under varying levels of abundance to distribute the conservation burden and share surplus production among user groups. There are numerous management plans throughout the state. For instance, in Cook Inlet there are 16 BOF Management Plans. Examples of management plans include:

- In Southeast Alaska there are plans for the troll fishery, purse seine fishery and gillnet fishery ¹⁴⁵
- Prince William Sound has a plan to allocate benefits from enhanced production ¹⁴⁶
- Kodiak has a BOF plan to manage the West Side salmon fishery ¹⁴⁷

¹⁴⁵ https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareasoutheast.salmon_managementplans

¹⁴⁶ <https://www.adfg.alaska.gov/static/applications/dcfnewsrelease/1354051820.pdf>

¹⁴⁷ <https://www.adfg.alaska.gov/FedAidPDFs/RIR.4K.2024.02.pdf>

6.2. The fishery management organization shall establish appropriate limit reference point(s) for exploitation (i.e., consistent with avoiding recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible; Appendix 1, Part 1). When a limit reference point is approached, measures shall be taken to ensure that it will not be exceeded. For instance, if fishing mortality (or its proxy) is above the associated limit reference point, actions should be taken to decrease the fishing mortality (or its proxy) below that limit reference point.

- Upper Cook Inlet has a Northern District King Salmon Management Plan ¹⁴⁸

Examples of Management Plans to increase escapements for Stocks of Concern include:

- Lynn Canal and Chilkat River King Salmon Fishery Management Plan ¹⁴⁹
- McDonald Lake Sockeye Salmon Management Plan ¹⁵⁰
- Yukon River Chinook Management Plan ¹⁵¹
- Upper Cook Inlet Northern District Management Plan ¹⁵²

References:	Munro, A.R. 2024. Summary of Alaska's 2023 Pacific salmon escapement and commercial harvest. NPAFC Doc. 2152. 13 pp. Alaska Department of Fish and Game https://npafc.org . Piston, A. W., and T. M. Fish. 2024. Pink salmon stock status and escapement goals in Southeast Alaska through 2023. Alaska Department of Fish and Game, Special Publication No. 24-16, Anchorage. https://www.adfg.alaska.gov/FedAidPDFs/SP24-16.pdf Vega, S. L., J. M. Head, T. Hamazaki, J. W. Erickson, and T. R. McKinley. 2022. Review of salmon escapement goals in Bristol Bay, Alaska, 2021. Alaska Department of Fish and Game, Fishery Manuscript Series No. 22-07, Anchorage. https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2022-2023/bb/FMS22-07.pdf		
Numerical score:	Starting score 10	Number of EPs <u>NOT</u> met 0	Overall score 10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Full Conformance
Non-conformance Number (if applicable):			

¹⁴⁸ https://www.adfg.alaska.gov/static/regulations/fishregulations/pdfs/commercial/2024_2027_cf_cook_inlet_salmon.pdf

¹⁴⁹ <https://www.touchngo.com/lglcntr/akstats/aac/title05/chapter033/section384.htm>

¹⁵⁰ <https://www.touchngo.com/lglcntr/akstats/aac/title05/chapter033/section384.htm>

¹⁵¹ <https://www.touchngo.com/lglcntr/akstats/aac/title05/chapter033/section384.htm>

¹⁵² https://www.adfg.alaska.gov/static/regulations/fishregulations/pdfs/commercial/2024_2027_cf_cook_inlet_salmon.pdf

9.3.3.3 Supporting Clause 6.3.

6.3.	Data and assessment procedures that measure the position of the fishery in relation to the reference points shall be established. Accordingly, the stock under consideration shall not be overfished (i.e., above limit reference point or proxy) and the level of fishing permitted shall be commensurate with the current state of the fishery resources, maintaining its future availability, and taking into account that long-term changes in productivity can occur due to natural variability and/or impacts other than fishing (Appendix 1, Part 1).
Relevance:	Relevant
Evaluation Parameters	
Process:	
<i>Data and assessment procedures (i.e., stock assessment process) are in place to measure the position of the fishery in relation to the target and limit reference points.</i>	X
EVIDENCE:	
As stated in 6.1, ADFG has established a comprehensive program to estimate escapement goals. That process is based on methods for estimating the catch by all user groups (see clause 4) and escapement. Importantly, catch, catch per unit of effort and escapements are collected in real time and for comparison with historic fishery performance in relation to run timing. The methods used to estimate escapement vary greatly depending upon local circumstances. For instance, counting towers are typically used for Sockeye Salmon in Bristol Bay, weirs are common for Sockeye Salmon in Kodiak, Chignik and Southeast. Mark recapture programs are common for Chinook Salmon in Southeast. Foot surveys are commonly used for Coho Salmon in Southeast. Aerial surveys are the normal practice for Pink and Chum salmon throughout the state. Sonar is used in large, occluded rivers such as the Yukon, Copper and Kenai. A complete listing of the method used for each escapement goal is found in Munro (2023).	
For systems that have developed BEG's such as Sockeye Salmon stocks in Bristol Bay and Westward Region and several Chinook Salmon stocks in the Yukon and Southeast Region there is a comprehensive program for estimating the age composition of both the catch and escapement.	
There is a mix of programs to estimate the stock specific catch in mixed stock fisheries. Coded microwire tags are used extensively in Southeast and Yakutat for Chinook and Coho salmon. Thermal marks on otoliths are used for pink salmon in Prince William Sound and for Chum Salmon in Southeast. Genetic stock Identification has/is used for Chinook Salmon in Cook Inlet and Southeast; it is also used for Sockeye Salmon in Cook Inlet, Bristol Bay and Southeast.	
Environmental data such as river discharge and water quality are key observations for helping to interpret escapement data based on aerial and foot surveys.	
These data needed for in-season management of the fisheries is obtained, synthesized and interpreted in real time by area research and management staff. Emergency Orders are issued to describe the area, time and gear allowed for fishing if surplus production is identified.	
Current status/Appropriateness/Effectiveness:	
<i>The current stock status in relation to reference points is used to determine the level of fishing permitted. The latter is commensurate with the current state of the fishery resources (i.e., close to or above target reference point and most importantly, not overfished or at or below its limit reference point or proxy), and takes into account that long-term changes in productivity can occur due to natural variability and/or impacts other than fishing. The stock is positioned at or above the target reference point. As a minimum, the stock is located above the midway point between the target and the limit reference point. It is important to clarify that, for salmon, spawning escapement goals are a suitable proxy for the intent of this clause. Escapement goal performance over a 4- to 5-year period shall be considered as a suitable minimum reference point for salmon management. Underperforming salmon stocks that do not meet their escapement goals for a sustained period (over 4– 5 years) shall be appropriately managed within the stock of concern framework by the State of Alaska to return them to safe biological targets. Assessors shall present evidence and evaluate escapement goals and escapement goal performance (i.e., met, not met) for all the wild salmon stock with a formal escapement goal in force in Alaska (about 300 annually). Overall, statewide summary data for Alaska can be found in the annually released ADF&G document</i>	X

6.3. Data and assessment procedures that measure the position of the fishery in relation to the reference points shall be established. Accordingly, the stock under consideration shall not be overfished (i.e., above limit reference point or proxy) and the level of fishing permitted shall be commensurate with the current state of the fishery resources, maintaining its future availability, and taking into account that long-term changes in productivity can occur due to natural variability and/or impacts other than fishing (Appendix 1, Part 1).

Summary of Pacific salmon escapement goals in Alaska with a review of escapements from [year] to [year]. The document generally presents the latest 9–10 years of salmon escapement performance in review.

EVIDENCE:

Statewide, area management biologists, with support from research staff, issue emergency orders consistent with Board of Fish Management Plans to regulate the harvest so as to achieve escapement goals. The current stock status (based on catches, effort, and escapements) in relation to reference points and BOF Management Plan to determine the level of fishing permitted. This process takes in to account annual variation and long-term changes in productivity. Management tends to position the stocks midway in the established escapement goal range

Each year ADF&G reports on the most recent nine years of escapements relative to goals (Munro 2024). A detailed summary of that data can be found in [Appendix 5](#). Munro (2024) summarized these data as follow

“In 2023 there were 257 salmon escapement goals in Alaska and 214 of the systems with escapement goals were successfully assessed for escapement (Table 2, Munro *in prep.*). Overall, 74% of the escapement goals were achieved or exceeded—up from 67% in 2022, and 4% greater than the previous 5-year average. Achievement of escapement goals in 2023 decreased for Chinook salmon, compared to 2022, remained about the same for sockeye salmon, and increased for coho, pink and chum salmon. A summary by species is as follows:

Chinook salmon—In 2023, 31% of the escapement goals were met for Chinook salmon compared to a recent high of 72% in 2019 and a 5-year average of 48%.

Sockeye salmon—Within Alaska, 91% of the sockeye salmon escapement goals were achieved in 2023 this was similar to 2022 (92%) and higher than the 5-year average of 85%.

Coho salmon—Achievement of escapement goals for coho salmon increased to 83% in 2022, compared to 59% in 2022. This achievement rate is higher than the recent 5-year average of 74% for coho salmon escapement goals.

Pink salmon—The percentage of pink salmon escapement goals met in 2023 was 86%, an increase from 2022 (75%) and higher than the 5-year average of 84%.

Chum salmon—For chum salmon, 73% of the escapement goals were met in 2023 (Figure 6), which is substantial increase compared to the 50% achieved in 2022 and continues the trend in improvement from the low of 44% in 2020.”

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that data and assessment procedures are installed measuring the position of the fishery in relation to the reference points. Accordingly, the stock under consideration is not overfished (i.e., it is above limit reference point or proxy) and the level of fishing permitted is commensurate with the current state of the fishery resources—maintaining its future availability and taking into account that long-term changes in productivity can occur due to natural variability and/or impacts other than fishing. Examples may include stock assessment reports or fishery management plans.

X

EVIDENCE:

Every three years ADFG presents provides a review of escapement goals presents information to the Board of Fish that includes information on stock status. ADFG also prepares Annual Area Management Reports that report on catches, escapements and stock status¹⁵³. The following are recent examples of these reports: Piston and Fish (2023); Elison et al. (2024); Foster et al. (2023)

¹⁵³ Copies of Area Management Reports can be found at: <https://www.adfg.alaska.gov/index.cfm?adfg=fishingcommercialbyarea.main>

6.3. Data and assessment procedures that measure the position of the fishery in relation to the reference points shall be established. Accordingly, the stock under consideration shall not be overfished (i.e., above limit reference point or proxy) and the level of fishing permitted shall be commensurate with the current state of the fishery resources, maintaining its future availability, and taking into account that long-term changes in productivity can occur due to natural variability and/or impacts other than fishing (Appendix 1, Part 1).

References:	Elison, T., A. Tiernan, T. Sands, S. Vega, and P. Stacey. 2024. 2023 Bristol Bay annual management report. Alaska Department of Fish and Game, Fishery Management Report No. 24-11, Anchorage. https://www.adfg.alaska.gov/FedAidPDFs/FMR24-11.pdf Foster, M. B., T. B. Polum, M. L. Wattum, E. K. C. Fox, T. R. McKinley, K. L. Schaberg, and H. Finkle. 2023. Review of salmon escapement goals in the Kodiak Management Area, 2022. Alaska Department of Fish and Game, Fishery Manuscript No. 23-03, Anchorage. https://www.adfg.alaska.gov/FedAidPDFs/FMS23-03.pdf Munro, A. R. 2023. Summary of Pacific salmon escapement goals in Alaska with a review of escapements from 2014 to 2022. Alaska Department of Fish and Game, Fishery Manuscript No. 23-01, Anchorage. https://www.adfg.alaska.gov/FedAidPDFs/FMS23-01.pdf Munro, A.R. 2024. Summary of Alaska's 2023 Pacific salmon escapement and commercial harvest. NPAFC Doc. 2152. 13 pp. Alaska Department of Fish and Game. https://npafc.org Piston, A. W., and T. M. Fish. 2024. Pink salmon stock status and escapement goals in Southeast Alaska through 2023. Alaska Department of Fish and Game, Special Publication No. 24-16, Anchorage. https://www.adfg.alaska.gov/FedAidPDFs/SP24-16.pdf			
Numerical score:	Starting score	Number of EPs <u>NOT</u> met	Overall score	
	10	0	10	
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)				High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)				Full Conformance
Non-conformance Number (if applicable):				

9.3.3.4 Supporting Clause 6.4.

6.4.	Management actions shall be agreed to in the eventuality that data sources and analyses indicate that these reference points have been exceeded. Accordingly, contingency plans shall be agreed in advance to allow an appropriate management response to serious threats to the resource as a result of overfishing, adverse environmental changes, or other phenomena that may have adverse impacts on the fishery resource (Appendix 1, Part 2). Such measures may be temporary and shall be based on best scientific evidence available.
Relevance:	Relevant
Evaluation Parameters	
Process:	
<i>There is an agreed process, system, or contingency plan in the eventuality that the data sources and analyses indicate that these reference points have been exceeded—detailing the appropriate management response to serious threats to the resource because of overfishing, adverse environmental changes, or other phenomena that may have adverse impacts on the fishery resource. Accordingly, the contingency plan/harvest control rule shall be agreed in advance to allow an appropriate management response to serious threats to the resource because of overfishing, adverse environmental changes, or other phenomena that may have adverse impacts on the fishery resource.</i>	
Met?	
X	
EVIDENCE:	
The statewide Sustainable Salmon Policy (SAAC 39.222) mandates, among other things, that escapement goals must be established for all exploited salmon stocks and that fisheries shall be managed to allow escapements within ranges necessary to conserve and sustain potential salmon production and maintain normal ecosystem functioning. This basic policy sets the expectation among fishers that ADFG will, as needed, exercise its statutory authority to manage the time and area where fishing is allowed so as to achieve those escapement goals. This policy also requires ADFG to provide the Board of Fish, on a regular basis, a stock status report, a review of escapement goals and action plans that include management directives to promote recovery of any stock of concern.	
Further guidance and expectations for the ADFG’s in-season management actions is found in the Policy for the Management of Sustainable Salmon Fisheries, “in the face of uncertainty, salmon stocks, fisheries, artificial propagation and essential habitats shall be managed conservatively”. This regulation further defines the “precautionary approach” to involve consideration of;	
a) the uncertainties in salmon fisheries and habitat management, b) biological, social, cultural, and economic risks, c) consideration of the needs of future generations, and d) placement of the burden of proof on those activities that pose a risk to salmon habitat or production.	
Often the Board of Fisheries determines it is in the state’s best interest to lay out specific management plans to guide the ADFG to achieve not only its biological goals, but also to meet Board of Fish decisions on the allocation of the annual catch among user groups. When this occurs, the Board develops specific management plans through its open public regulatory process. There are over 100 BOF salmon management plans that detail the specific management actions that are to be taken to ensure that management targets are met, these plans can be found in the commercial fishing regulations, for example (ADFG 2024) outlines plans for the Cook Inlet area. The public Board of Fish process that permits individuals to submit regulatory proposals, to testify, present data and management options ensures that diverse points of view can be considered when crafting management plans ¹⁵⁴ .	
Current status/Appropriateness/Effectiveness:	
<i>In the eventuality that the current level of the stock has exceeded target or limit reference points, the agreed and corresponding management action (as directed by the harvest control rule or framework) shall be immediately implemented and fishing reduced or halted as necessary. The harvest control rule is effective at keeping or bringing back the stock to acceptable and safe biological levels (i.e., to avoid overfishing/ed status).</i>	
x	

¹⁵⁴ The authority, process and annual schedule for the BoF can be found at: <http://www.adfg.alaska.gov/index. And schedule used cfm?adfg=fisheriesboard.main>.

6.4. Management actions shall be agreed to in the eventuality that data sources and analyses indicate that these reference points have been exceeded. Accordingly, contingency plans shall be agreed in advance to allow an appropriate management response to serious threats to the resource as a result of overfishing, adverse environmental changes, or other phenomena that may have adverse impacts on the fishery resource (Appendix 1, Part 2). Such measures may be temporary and shall be based on best scientific evidence available.

Underperforming salmon stocks that do not meet their escapement goals shall be appropriately managed within the stock of concern framework by the State of Alaska.

EVIDENCE:

ADFG uses in-season estimates of stock status in relation to goals data to manage the time and area fished so as to meet both escapement goals and social/economic/cultural objectives specified in Board of Fish management plans. This system has been very effective in managing fishing mortality so as to achieve escapement goals. ADFG has successfully implement BoF management plans for stocks of concern. Examples of how ADFG implemented in-season management measure to ensure escapement goals are detailed in Annual Area Management Reports ¹⁵⁵. How ADFG managed the Nushagak fishery in 2023 (Elison et al. 2023) provides an example for this process:

“The 2023 inshore run forecast for the Nushagak District was 16.3 million sockeye salmon with 2.6 million projected for escapement and 13.7 million projected for harvest. The run forecast for each river system was 7.8 million fish expected to return to the Wood River, 6.8 million for the Nushagak River, and 1.7 million for the Igushik River (Table 2). The 2023 Nushagak District total inshore sockeye salmon run was 16.9 million fish, 4% above the preseason forecast of 16.3 million fish (Tables 2 and 14). Commercial sockeye salmon harvest in Nushagak District reached 12.015 million fish, 12% below the preseason projected surplus of 13.6 million fish and 22% above the 2003–2023 average harvest of 9.8 million sockeye salmon (Table 2; Appendices A3 and A15).

The Board adopted a King Salmon Conservation Action Plan (action plan) in the spring of 2023 (ADF&G 2023). Under this action plan, Optimum Escapement Goals (OEGs) were adopted for Nushagak and Wood River sockeye salmon (Table 1). These goals were not in place when the forecast was released in the fall of 2022 and the projected surplus did not account for the higher OEGs established by the Board.

Prior to the season the department released a preseason outlook (Sands et al. 2023) to inform stakeholders of the approach the department would be taking for management. The following is an excerpt from the Nushagak District preseason outlook that explains the strategy based on the new Nushagak District King Salmon Stock of Concern Management Plan (5 AAC 06.391).

“There are three triggers that guide when to start fishing under the new Nushagak King Salmon Action Plan regulations, commercial fishing with drift gillnets in the Nushagak District and set gillnets in the Nushagak Section may begin once any one of the following triggers is met:

- The Nushagak River trigger is 420,000 sockeye salmon projected past the sonar.
- The Wood River trigger is 800,000 sockeye salmon projected past the counting tower.
- If neither of the above conditions are met by 9:00 AM June 28, then fishing may be allowed in the Nushagak District at that time.

In addition to the triggers that regulate the start of fishing, the board adopted Optimal Escapement Goals (OEGs) larger than department SEGs, which can reduce effort after commercial fishing starts. Those OEGs are structured such that 15% of the preseason forecast is added to the upper end of each SEG range. Lower bounds of both SEGs remain unchanged.

- *The 2023 upper bound of the Wood River OEG is 3.0 million sockeye salmon.*
- *The 2023 upper bound of the Nushagak River OEG is 2.0 million sockeye salmon.*

The strategy for 2023 was to start directed sockeye salmon openings once one or more of the triggers had been met. From that point on, the department would make tide-by-tide decisions attempting to balance escapements of Chinook, chum, and sockeye salmon with fishing opportunity. It was indicated that set gillnet permit holders should expect to have occasional closures into the second week of July and drift gillnet openings would be timed to give opportunity for Chinook and chum salmon to pass through the district. Permit holders were asked to avoid areas where they may catch higher

¹⁵⁵ Copies of Area Management Reports are available at <https://www.adfg.alaska.gov/index.cfm?adfg=fishingcommercialbyarea.main>

6.4. Management actions shall be agreed to in the eventuality that data sources and analyses indicate that these reference points have been exceeded. Accordingly, contingency plans shall be agreed in advance to allow an appropriate management response to serious threats to the resource as a result of overfishing, adverse environmental changes, or other phenomena that may have adverse impacts on the fishery resource (Appendix 1, Part 2). Such measures may be temporary and shall be based on best scientific evidence available.

numbers of Chinook and chum salmon. Commercial fishing openings would be scheduled based on sockeye salmon escapement levels in the Nushagak and Wood Rivers. Mesh size was limited to 5.5 inches or smaller beginning June 1 for the conservation of Chinook salmon. If the run came in as forecast, it was likely that the Wood River Special Harvest Area would be used in 2023 to harvest surplus sockeye salmon. In this case, fishing opportunity would be afforded to the gear type behind on harvest percentage relative to the allocation.

The sonar escapement enumeration project at Portage Creek was fully operational on June 6 (Table 7). As the Chinook salmon run developed, it tracked below historical passage expectations from the beginning. This continued for the entire season, with the final escapement index at only 1,631,499 fish. Under the new King Salmon stock of concern action plan, management of the sockeye salmon fishery was initially focused on efforts to protect Chinook salmon and achieve the escapement goal. Under previous regulations, sockeye salmon openings would have been triggered on June 22 when 100,000 sockeye salmon escapement was projected past the Wood River tower. Under the new action plan, commercial fishing for sockeye salmon did not start until late on June 25, when both triggers were met for 420,000 sockeye salmon projected past the Nushagak sonar and 800,000 sockeye salmon projected past the Wood River tower. This additional delay in starting the sockeye salmon fishery allowed over 10,000 Chinook salmon to pass through the district and escape into the river.

Decisions really started the morning of June 23, when staff received the escapement counts for the previous day. The Nushagak River sockeye salmon escapement for June 22 was 95,388, bringing the cumulative to 126,618, and the Wood River sockeye salmon escapement was 91,824, for a cumulative of 103,506 (Tables 7 and 17). Both numbers represented large increases in the escapement rates and triggers for opening commercial fishing were likely to be met in the next few days. Based on these increased escapement numbers, staff announced that the fleet should be prepared to respond to short-notice openings as early as the morning of June 24. Sockeye salmon escapement stayed strong but did not increase in either river on June 23. The counts for the morning of June 24 were still below both trigger points and staff announced the earliest possible fishing would be the morning of June 25. By the evening of June 24, staff were confident the triggers would be met on June 25 but decided to wait until the morning of June 25 to announce fishing for later that evening.

Once fishing began, openings occurred on every tide, although there were periods where all drift gear and all Nushagak Section set gillnet gear were out of the water every day until July 2 (Table 18). Staff considered weather, escapement, and harvest information and flew aerial surveys to try to find the best way to allow harvest opportunity on sockeye salmon while still having fishing breaks with all gear out of the water to allow passage of king and chum salmon.

Unfortunately, the total Chinook salmon return to the Nushagak River was well below average. The peak daily escapement and the midpoint of the escapement was June 25 (Table 7). The Chinook salmon run produced a commercial harvest of 5,785 Chinook salmon in the Nushagak District in 2023 (Tables 6 and 18). This harvest is 18% of the 2003-2023 average harvest of 33,026 fish for the Nushagak District (Appendices A4 and A17). The Chinook salmon sonar index for the Nushagak River was 31,499, well below the 55,000-salmon lower end of the escapement goal range (Tables 2 and 7; Appendix A17).

The later start to commercial fishing resulted in more sockeye salmon escapement early in the season. For the Wood River, this meant the trigger to open the Wood River Special Harvest Area (WRSHA) was achieved on June 27. At that time the drift gillnet fleet harvest percentage was less than the 74% allocation. Therefore, the WRSHA was opened to commercial fishing with drift gillnets starting at 5:00 PM, June 27. By the end of the day on June 28, the drift gillnet fleet harvest percentage had exceeded the 74% allocation. Therefore, the WRSHA was opened to set gillnet fishing beginning on June 29 and continued for the rest of the season until the WRSHA closed on July 20.

Igushik set gillnet fishing opened on June 1 to continuous fishing and remained open until June 12, when additional buyers were able to begin operations for the season (Table 18). Once a major buyer began operations, fishing was limited to no

6.4. Management actions shall be agreed to in the eventuality that data sources and analyses indicate that these reference points have been exceeded. Accordingly, contingency plans shall be agreed in advance to allow an appropriate management response to serious threats to the resource as a result of overfishing, adverse environmental changes, or other phenomena that may have adverse impacts on the fishery resource (Appendix 1, Part 2). Such measures may be temporary and shall be based on best scientific evidence available.

more than 15 hours a day until June 25, when 17 the fishing was extended until further notice. Escapement into the Igushik River was stronger than usual from the 4th day of counting on June 27 (Table 17). Escapement continued at an above-average pace and the 150,000-salmon lower end of the escapement goal was exceeded on July 2 (Table 17).

Sockeye salmon escapement in the district's 3 major river systems was 2,648,616 for Wood River, 542,496 for Igushik River, and 1,772,676 for Nushagak River (Tables 7 and 17). Igushik River sockeye salmon escapement was above the escapement goal range (150,000–400,000), while the Nushagak and Wood Rivers' escapements were within the upper end of the OEG ranges established by the Board, 370,000–2.0 million and 700,000–3.0 million respectively (Table 1).

Fishing remained open continuously in the Nushagak District for both drift and set gillnets, but effort gradually diminished over the remainder of the season (Table 18). Without sonar counts, it was impossible to quantify the pink or coho salmon runs in 2023. Pink salmon do not occur in large numbers on odd years in Bristol Bay, so pink salmon abundance in the Nushagak District was minimal. With no significant pink salmon run and decreasing sockeye salmon abundance, most major processors ceased buying operations in the third week of July and fishing quickly tapered off. There was very little, if any, directed fishing for coho salmon because most permit holders were still focused on sockeye salmon harvesting opportunities on the Eastside of Bristol Bay. "

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that management actions are agreed should data sources and analyses indicate that these reference points have been exceeded. Accordingly, contingency plans are agreed in advance for the appropriate management response to serious threats to the resource as a result of overfishing, adverse environmental changes, or other phenomena that may have adverse impacts on the fishery resource. Such measures may be temporary and are based on best scientific evidence available. Examples may include stock assessment reports or fishery management plans.

X

EVIDENCE:

Escapement goals that serve as the primary basis for Alaska salmon management and the Management Plans designed to achieve these goals are developed in the Board of Fish process. This process permits individuals to submit regulatory proposals, to testify, present data and management options ensures that diverse points of view can be considered when crafting management plans. This process results in an "agreed" in-season approach to management. There are over 100 Salmon Management Plans, ADFG publishes these plans on-line in the Commercial Fishery Regulation booklets ¹⁵⁶.

Descriptions of how ADFG implanted these Management Plans along with the resulting escapements are detailed in Area Management Reports ¹⁵⁷. Examples for of these reports are Elison et al. (2024); Hollowell et al. (2023); Botz et al. (2023) and Middleton and Russell (2023).

References:

Botz, J., H. Scannell, M. Olson, J. Morella, and R. Ertz. 2024. 2023 Prince William Sound area finfish management report. Alaska Department of Fish and Game, Fishery Management Report No. 24-15, Anchorage. <https://www.adfg.alaska.gov/FedAidPDFs/FMR24-15.pdf>

Elison, T., A. Tiernan, T. Sands, S. Vega, and P. Stacey. 2024. 2023 Bristol Bay annual management report. Alaska Department of Fish and Game, Fishery Management Report No. 24-11, Anchorage. <https://www.adfg.alaska.gov/FedAidPDFs/FMR24-11.pdf>

Hollowell, G., E. O. Otis, and E. Ford. 2024. 2023 Lower Cook Inlet area salmon annual management report. Alaska Department of Fish and Game, Fishery Management Report No. 24-18, Anchorage.

¹⁵⁶ Copies of Commercial Fish Regulations can be found at: <https://www.adfg.alaska.gov/index.cfm?adfg=fishregulations.Commercial>

¹⁵⁷ Copies of Commercial Fish Annual Management Plans can be found at: <https://www.adfg.alaska.gov/index.cfm?adfg=fishingcommercialbyarea.main>

6.4. Management actions shall be agreed to in the eventuality that data sources and analyses indicate that these reference points have been exceeded. Accordingly, contingency plans shall be agreed in advance to allow an appropriate management response to serious threats to the resource as a result of overfishing, adverse environmental changes, or other phenomena that may have adverse effects on impacts on the fishery resource (Appendix 1, Part 2). Such measures may be temporary and shall be based on best scientific evidence available.

<https://www.adfg.alaska.gov/FedAidPDFs/FMR24-18.pdf>

Middleton, W. S., and C. W. Russell. 2024. North Alaska Peninsula commercial salmon annual management report, 2023. Alaska Department of Fish and Game, Fishery Management Report No. 24-13, Anchorage.
<https://www.adfg.alaska.gov/FedAidPDFs/FMR24-13.pdf>

Numerical score:	Starting score	Number of EPs <u>NOT</u> met				Overall score	
	10	-	(	0	x 3	) =	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)							High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)							Full Conformance
Non-conformance Number (if applicable):							

9.3.3.5 Supporting Clause 6.5.

6.5	Measures shall be introduced to identify and protect depleted stocks and those stocks threatened with depletion, and to facilitate the sustained recovery/restoration of such stocks. Also, efforts shall be made to ensure that resources and habitats critical to the well-being of such stocks, which have received adverse impacts by fishing or other human activities, are restored.		
Relevance:	Relevant		
Process: <i>There is a process that identifies depleted stocks, resources, and habitats. A depleted stock is usually a stock, which has been overfished, the stock status is below limit reference point, and the ability of the stock to recover has been impaired.</i>			
EVIDENCE: Alaska's sustainable salmon fishery policy (5 AAC 39.222) requires ADFG to report to the BOF any salmon stock that has chronically failed to meet its escapement goal. The policy defines three levels of concern (yield, management, and conservation) with yield being the lowest level of concern and conservation the highest level of concern. Chronic inability is defined as "the continuing or anticipated inability to meet expected yields over a 4 to 5-year period." This designation allows the BOF and ADF&G to develop specific management measures to prevent fishing activity from allowing rebuilding to sustainable levels. The action plans contain goals, measurable and implementable objectives, and provisions for fishery management actions needed to achieve rebuilding. Also included are performance measures appropriate for monitoring and gauging the effectiveness of the action plan, and as deemed appropriate, a research plan.			
Current status/Appropriateness/Effectiveness: <i>There is evidence that where depleted or adversely impacted stocks, resources, and habitats have been identified, efforts have been made to ensure they are restored or allowed to recover (i.e., ideally within a two generations timescale). Underperforming salmon stocks that do not meet their escapement goals shall be appropriately managed within the stock of concern framework by the State of Alaska.</i>			
EVIDENCE: There are 23 stocks of concern (Table 15). Nineteen stocks have been identified as a management concern and two have been identified as a yield concern.			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that measures are introduced to identify and protect depleted stocks and those stocks threatened with depletion, and to facilitate the sustained recovery/restoration of such stocks. Also, efforts are made to ensure that resources and essential habitats critical to the wellbeing of the stocks, which have been adversely impacted by fishing or other human activities, are restored. Examples may include laws and regulations, fishery management plans, and stock assessment reports.</i>			
The BOF develops Management Plans to guide ADFG in season management actions to foster the rebuilding of stocks of concern. Examples of these Management Plans include: • 5 AAC 21.359. Kenai River Late-Run King Salmon Management Plan • 5 AAC 15.357. Chignik Area Salmon Management Plan • 5 AAC 05.360. Yukon River King Salmon Management Plan As stated previously, Annual Area Management Reports detail how these plans were implemented and the resulting stock status.			
References:			
Numerical score:	Starting score	Number of EPs <u>NOT</u> met	Overall score
	10	0	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High
Corresponding Conformance Level:			Full Conformance

6.5	Measures shall be introduced to identify and protect depleted stocks and those stocks threatened with depletion, and to facilitate the sustained recovery/restoration of such stocks. Also, efforts shall be made to ensure that resources and habitats critical to the well-being of such stocks, which have received adverse impacts by fishing or other human activities, are restored.
(10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)	
Non-conformance Number (if applicable):	

9.3.4 Fundamental Clause 7. Precautionary approach

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.

9.3.4.1 Supporting Clause 7.1.

7.1.	The precautionary approach shall be applied widely to conservation, management, and exploitation of ecosystems to protect them and preserve the ecosystem. This should take due account of fishery enhancement procedures, where appropriate. Absence of scientific information shall not be used as a reason for postponing or failing to take conservation and management measures. Relevant uncertainties shall be taken into account through a suitable method of risk management, including those associated with the use of introduced or translocated species. ¹⁵⁸
Relevance:	Relevant.
Evaluation Parameters	Met?
Process: <i>There are management measures, regulations, and laws that command or direct the use of the precautionary approach (PA) for conservation, management, and exploitation of the aquatic resources under assessment. This could either take the form of an explicit commitment to the application of the PA, or be evidenced by an overarching approach applied throughout the management literature.</i>	☒
EVIDENCE: Alaska's policies for Sustainable Fisheries Management, embodied in the State Constitution and regulations includes, key elements of the precautionary approach for salmon fisheries and habitats. Faced with various uncertainties current evidence provided by ADFG is consistent with a conservative approach to the management of salmon stocks, fisheries, artificial propagation, and essential salmon habitats. Alaska State Regulation, the Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.222 (a) (1); (a) (5) (A, B),) codifies the precautionary approach in State regulation of salmon fisheries and habitats. This policy states that in the face of uncertainty, salmon stocks, fisheries, artificial propagation, and essential habitats shall be managed conservatively as follows; • a precautionary approach, involving the application of prudent foresight that takes into account the uncertainties in salmon fisheries and habitat management, the biological, social, cultural, and economic risks, and the need to take action with incomplete knowledge, should be applied to the regulation and control of harvest and other human-induced sources of salmon mortality; • a precautionary approach requires consideration of the needs of future generations and avoidance of potentially irreversible changes; prior identification of undesirable outcomes and of measures that will avoid undesirable outcomes or correct them promptly; • initiation of any necessary corrective measure without delay and prompt achievement of the measure's purpose, on a time scale not exceeding five years, which is approximately the generation time of most salmon species; • that where the impact of resource use is uncertain, but likely presents a measurable risk to sustained yield, priority should be given to conserving the productive capacity of the resource; • appropriate placement of the burden of proof, of adherence to the requirements of this subparagraph, on those plans or ongoing activities that pose a risk or hazard to salmon habitat or production; • a precautionary approach should be applied to the regulation of activities that affect essential salmon habitat.	
Current status/Appropriateness/Effectiveness: <i>The FAO Guidelines for the PA for fisheries management (FAO CCRF 1995) advocate a comprehensive management process that includes data collection, monitoring, research, enforcement, and review. More specifically, prior identification of desirable (target) and undesirable (limit) reference points must be carried out, and measures are required that will avoid</i>	☒

¹⁵⁸ FAO Technical Guidelines for Responsible Fisheries No. 2 – Precautionary approach to capture fisheries and species introductions.
<http://www.fao.org/docrep/003/w3592e/w3592e00.htm>

7.1. The precautionary approach shall be applied widely to conservation, management, and exploitation of ecosystems to protect them and preserve the ecosystem. This should take due account of fishery enhancement procedures, where appropriate. Absence of scientific information shall not be used as a reason for postponing or failing to take conservation and management measures. Relevant uncertainties shall be taken into account through a suitable method of risk management, including those associated with the use of introduced or translocated species.¹⁵⁸

undesirable outcomes with high probability and correct them promptly should they occur. The guidelines suggest that this be achieved through rules that specify in advance what action should be taken when specified deviations from operational targets are observed (i.e., harvest control rules). Furthermore, the guidelines suggest that a management plan should not be accepted until it has been shown to perform effectively in terms of its ability to avoid undesirable outcomes (for example through simulation trials). Lastly, the absence of adequate scientific information should not be used as a reason for postponing or failing to take measures to conserve target species, associated or dependent predator, or non-target species and their environment (<https://www.sciencebase.gov/catalog/item/50538887e4b097cd4fce2446>). There is evidence for the practical application of the PA for resource management and conservation. Note that the PA may be integrated into stock assessment practices, specific management measures enacted for everyday fisheries operations, or other measures. Application of the PA considers enhanced fisheries (e.g., at the policy level) where appropriate, and relevant uncertainties are considered using a suitable method of risk management (e.g., evaluation of potential impacts of increased hatchery releases on wild salmon), including that associated with the use of introduced or translocated species.

EVIDENCE:

Effective application of the precautionary approach is demonstrated by two recent examples:

1. Depressed runs, declining productive, and biological changes in age and size of Chinook populations; and
2. Uncertainty over wild salmon effects of large-scale hatchery production of pink and chum salmon in Prince William Sound and Southeast Alaska.

Chinook Salmon Management

Escapements of Chinook Salmon have declined throughout much of Alaska with substantial decline in marine survival since 2007. Declines have been particularly severe among the older, larger age classes (Lewis et al. 2015). The decline is widespread from the southeastern panhandle to the Yukon River including major populations returning to the Yukon, Kuskokwim, Nushagak, Susitna, Kenai, Copper, Alek, Taku, and Stikine rivers as well as many smaller streams. Recent returns have been among the lowest on record and escapements are widely failing to achieve escapement goals established under more-productive environmental conditions.

A total of 18 Chinook salmon stocks are currently designated as stocks of concern due to chronic failures to reach escapement goals and/or declines in yield. These designations resulted in adoption of stock-specific action plans which have included substantial management actions designed to reduce fishery exploitation rates and maximize spawning escapements to the extent possible under current low production levels. Significant fishery closures and restrictions have been necessary in many areas in the effort to pass as much of the Chinook salmon run to the spawning grounds as possible. For example, directed commercial, sport, domestic and personal use fisheries for Chinook in the mainstem Yukon River and Canadian tributaries were closed for one full life cycle (seven years) for 2024 through 2030 by agreement of Fisheries and Oceans Canada and the Alaska Department of Fish and Game.¹⁵⁹ The Kenai River sport fishery for Chinook and eastside Cook Inlet commercial set gillnet fishery targeting sockeye salmon have been closed for consecutive years in order to protect Kenai late-run Chinook. Annual openers of Nushagak commercial sockeye fisheries have been delayed and inriver sport fisheries reduced in order to increase escapements of Nushagak Chinook. Inside southeast Alaska sport and commercial fisheries have been substantially reduced in order to protect transboundary Chinook stocks. Most recently, sport fisheries in marine waters of the northern Gulf of Alaska, Kodiak and the Alaska Peninsula have been closed or restricted in order to reduce interception of depleted Chinook stocks.

Alaska has also implemented significant new research to better understand the factors affecting Chinook salmon abundance in Alaska. New funding for research was provided by the Alaska Legislature in 2013 for a Chinook Salmon Research Initiative, by U. S. congressional appropriation in 2014 for fishery disaster relief under the Magnuson-Stevens Fisheries Management and Conservation Act, and by the U.S. federal government, the Pacific Salmon Commission Northern Endowment Fund and the State of Alaska for implementation of the Pacific Salmon Treaty and Chinook salmon research and management.

¹⁵⁹ https://www.adfg.alaska.gov/static/home/news/hottopics/pdfs/yukon_river_chinook_salmon_7_year_management_2024_2030.pdf

Hatchery Effects

The significance of hatchery-wild interactions of salmon in Alaska has long been a subject of scientific research and debate. Large increases in Alaska hatchery production beginning in the 1970s led to growing concern for potential negative impacts based on information from hatchery programs in the Pacific Northwest and elsewhere (Grant 2012; Amoroso et al. 2017; Evenson et al. 2018).

Hilborn & Eggers (2000, 2001) suggested that the hatchery pink salmon replaced rather than augmented wild production in Prince William Sound due to a decline in wild escapement associated with harvesting hatchery stocks and biological impacts of the hatchery fish on wild fish. However, further assessments failed to support Hilborn and Eggers' interpretation of countervailing trends in abundance of wild and hatchery fish. Proposed mechanisms for negative impacts were not supported by the available data (Mortensen et al. 2000; Wertheimer et al. 2001, 2004). Wild escapements of pink salmon were not substantially reduced by harvest of hatchery pink salmon. A low overall incidence of hatchery straying into natural spawning areas did not support a hypothesis of significant aggregate effects on wild population fitness. High survival rates of hatchery-origin fish from release to adulthood did not indicate that intra-specific competition was a significant limiting factor.

To assess potential hatchery-wild interactions, a series of hatchery straying assessments were conducted beginning in the 2000s (Wilson 2024). Hatchery Sockeye Salmon straying was studied in Kodiak (Baer and Honnold 2002), the Copper River basin (Bidlack and Valentine 2009) and the Kenai River (Habicht et al. 2013; Stopha 2012). Hatchery Chum Salmon straying was assessed in Southeast Alaska (Piston and Heintz 2012a, 2012b; Josephson et al. 2021; McCarrel et al. 2023), Prince William Sound (Brenner et al. 2012; Knudsen et al. 2021) and Kodiak (Weber 2021, 2022). Hatchery pink salmon straying was assessed in Prince William Sound (Knudsen et al. 2021), lower Cook Inlet (Otis et al. 2018, 2020, 2021, 2022, 2023; Otis & Hollowell 2019) and Kodiak (Weber 2021, 2022). Hatchery Chinook Salmon straying was reportedly monitored on several Southeast Alaska systems over an extended period (Wilson 2024).

In 2011, concern about possible impacts on wild stocks of large-scale hatchery production of Pink and Chum Salmon led ADF&G to organize a Science Panel for the purpose of defining the specific issues associated with this concern. This Panel included scientists with broad experience in salmon fishery enhancement, research, and management—from ADF&G, University of Alaska, aquaculture associations, and National Marine Fisheries Service. Three primary questions were identified:

1. What is the genetic stock structure of Pink and Chum salmon in each region?
2. What is the extent and annual variability in straying of hatchery Pink Salmon in Prince William Sound (PWS) and Chum Salmon in PWS and Southeast Alaska (SEAK)?
3. What is the impact on fitness (productivity) of wild Pink and Chum salmon stocks due to straying of hatchery Pink and Chum salmon?

A comprehensive, long-term Alaska Hatchery Research Project was initiated in 2013 to address these questions. Study funding was shared among the PNP operators, salmon processors, and the State of Alaska, and is administered by ADF&G. Field work was conducted by the Prince William Sound Science Center and the Sitka Sound Science Center. This work has produced extensive new information on genetic stock structure, straying and relative fitness in relation to hatchery enhancement (ADF&G 2018, 2022; Americus et al. 2022b, 2025).

Substantial genetic stock structure has been identified in all salmon species which could be impact if hatchery-wild interactions were significant. Divergence among populations was relatively shallow for pink salmon (Cheng et al. 2016, 2019, 2022; Jasper et al. 2013) and most substantial for Sockeye Salmon (Quinn et al. 2012; with Chum Salmon in between (Gilk-Baumer & Templin 2019; Barclay et al. 2024). Significant genetic population structure remains despite long-term hatchery programs and populations remain similar over time although there is some indication of introgression of hatchery strays (Templin 2024).

Chronic low levels of straying by hatchery Pink and Chum Salmon across broad areas with a greater incidence in some areas of proximity to hatcheries (Knudsen et al. 2015a, 2015b, 2016, 2021; Josephson et al. 2021). Significant straying of Chinook, Coho and Sockeye hatchery salmon has not been observed and enhancement levels are relatively modest in relation to wild abundance. The highest stray proportions are observed near hatcheries and along migratory pathways (Templin 2024). Hatchery strays typically comprised small proportions of total spawning escapements of all species even in regions where large production programs occur and spawning escapement goals are generally being achieved for wild populations. Relative reproductive success of pink salmon has been found to be substantially less than for hatchery than wild Pink salmon although the basis for this difference is not yet clear (Lescak et al. 2019; McMahon 2021; Shedd et al. 2022; May et al. 2024; McMahon et al. 2025). An assessment of relative reproductive success of hatchery Chum Salmon is ongoing. Study results and their application to assessment conditions are discussed for each unit of assessment in subsequent sections of this audit report.

7.1. The precautionary approach shall be applied widely to conservation, management, and exploitation of ecosystems to protect them and preserve the ecosystem. This should take due account of fishery enhancement procedures, where appropriate. Absence of scientific information shall not be used as a reason for postponing or failing to take conservation and management measures. Relevant uncertainties shall be taken into account through a suitable method of risk management, including those associated with the use of introduced or translocated species. ¹⁵⁸

Research about hatchery and wild chum salmon interactions is ongoing and the impacts of these interactions is not definitive at this time (Vincent-Lang 2025). Pending completion of the Alaska Hatchery Research Project, ADF&G commissioner Vincent-Lang issued a "Hatchery Statement" at the 2024 Cook Inlet Upper Cook Inlet Finfish Board of Fish articulating a policy decision to not increase permitted pink salmon egg-take capacity until concerns over hatchery-wild interactions are addressed (Vincent-Lang 2024, Americus 2025). The last increase in permitted Pink salmon egg take occurred in 2018, in Prince William Sound (+1.5% of statewide pink capacity; Stopha 2019). The last increase in permitted Chum Salmon egg take occurred in 2019, in Southeast Alaska (+1.5% of statewide capacity; Wilson 2024).

A precautionary response has also been demonstrated by a response to straying of hatchery chum salmon into a wild spawning stream on Southeast Alaska. Unexpectedly large numbers of Crawfish Inlet hatchery fish were observed to stray into wild summer run Chum Salmon spawning streams in West Crawfish Inlet (Piston & Fish 2024). In order to maximize harvest of the hatchery fish and reduce the incidence of straying, a targeted hatchery cost recovery fishery has been conducted in addition to common property net and troll fisheries. In addition, the Commissioner of ADF&G issued a statement at the 2025 Board of Fisheries meeting identifying an intent to reduce permitted hatchery Chum Salmon egg take by 25% in 2025 from 30 million to 22.5 million (Vincent-Lang 2025). The ADF&G Commissioner has also directed the Joint Southeast Regional Hatchery Planning Team to conduct a review of Chum Salmon release strategies, release numbers, and release locations and report to the commissioner by December 31, 2025, their findings and recommendations regarding what is working well, what is not working well, impacts on wild salmon stocks, and potential improvements to the salmon fishery enhancement program (Vincent-Lang 2025).

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the PA is applied to conservation, management, and exploitation of an ecosystem to protect them and preserve the ecosystem. Examples may include stock assessment reports, fishery management plans and other documents.



EVIDENCE:

The comprehensive nature of the response to both of the fishery management concerns described above testify to the ADFG's strong commitment to precautionary management of Alaska's salmon fishery.

References: See citations as evidence

Numerical score:	Starting score		Number of EPs <u>NOT</u> met					x 3		=		Overall score
	10			0							10	
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)											High	
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)											Full Conformance	
Non-conformance Number (if applicable):												

9.3.4.2 Supporting Clause 7.1.1.

7.1.1. In implementing the PA, the fishery management organization shall take into account, *inter alia*, uncertainties relating to the size and productivity of the stocks, reference points, stock condition in relation to such reference points, levels and distribution of fishing mortality, the impact of fishing activities (including discards) on non-target and associated or dependent predators, and environmental and socioeconomic conditions.

Relevance: Relevant

Evaluation Parameters

Met?

Process:

There is a system in place under which the potential uncertainties listed above can be examined and taken into



7.1.1.	In implementing the PA, the fishery management organization shall take into account, <i>inter alia</i> , uncertainties relating to the size and productivity of the stocks, reference points, stock condition in relation to such reference points, levels and distribution of fishing mortality, the impact of fishing activities (including discards) on non-target and associated or dependent predators, and environmental and socioeconomic conditions.		
account during the decision-making process.			
EVIDENCE:			
There is a system in place 5 AAC 39.220 Policy for the management of mixed stock salmon fisheries, 5 AAC 39.222 Policy for the management of sustainable salmon fisheries and 5 AAC 39.223 Policy for statewide salmon escapement goals.			
Current status/Appropriateness/Effectiveness:			☑
There is evidence to demonstrate that in the fishery under assessment, uncertainties considered include those associated with the size and productivity of the stocks, reference points, stock condition in relation to such reference points, levels and distribution of fishing mortality and the impact of fishing activities (including discards) on non-target and associated or dependent predators, as well as environmental and socio-economic conditions.			
EVIDENCE:			
The current status is thoroughly discussed in supporting clauses 6.1, 6.2 and 6.3.			
Evidence Basis:			☑
The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that in implementing the PA, the fishery management organization takes into account, <i>inter alia</i> , uncertainties relating to the size and productivity of the stocks, reference points, stock condition in relation to such reference points, levels and distribution of fishing mortality and the impact of fishing activities (including discards) on non-target and associated or dependent species, as well as environmental and socio-economic conditions. Examples may include stock assessment reports, fishery management plans and other documents.			
EVIDENCE:			
The evidence is sufficient to substantiate that ADFG is using all the necessary tools to manage the Alaska salmon fisheries implementing precautionary management.			
References:	See citations as evidence		
Numerical score:	Starting score	Number of EPs <u>NOT</u> met	Overall score
	10	0 x 3	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Full Conformance
Non-conformance Number (if applicable):			--

9.3.4.3 Supporting Clause 7.1.2.

7.1.2.	In the absence of adequate scientific information, appropriate research shall be initiated in a timely fashion.		
Relevance:	Relevant		
Evaluation Parameters			Met?
Process: <i>There is a process that identifies weaknesses in the scientific information available to fishery management organizations, and initiates additional research as necessary. The primary focus of this requirement is the status of the stocks under consideration.</i>			☒
EVIDENCE: The policy for the Management of Sustainable Fisheries specifies “that where the impact of resource use is uncertain, but likely presents a measurable risk to sustained yield, priority should be given to conserving the productive capacity of the resource” (5 AAC 39.222 (a) (5)(A)(iv).			

7.1.2.	In the absence of adequate scientific information, appropriate research shall be initiated in a timely fashion.		
Current status/Appropriateness/Effectiveness: <i>There is evidence that such a process has been applied in the case of the fishery under assessment, including examples of initiated research. Depending on the situation, appropriate research or further analysis of the identified risk is initiated in a timely fashion.</i>			☒
EVIDENCE: The best example of the application of current status and effectiveness is the two examples of research and management actions for the Chinook salmon decline statewide and the issue of the interaction of wild origin and hatchery origin pink and chum salmon discussed in detail in 7.1.			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that in the absence of adequate scientific information, appropriate research is initiated in a timely fashion. Examples may include various data or scientific reports.</i>			☒
EVIDENCE: The quality and excellence of the evidence together with the collaboration of the stakeholders is more than sufficient to substantiate that action was taken in a timely fashion given the need conduct the research in the field.			
References:	See citations as evidence		
Numerical score:	Starting score 10	– (Number of EPs <u>NOT</u> met 0	x 3) = Overall score 10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Full Conformance
Non-conformance Number (if applicable):			

9.3.4.4 Supporting Clause 7.2.

7.2.	In the case of new or exploratory fisheries, the fishery management organization shall adopt, as soon as possible, cautious conservation and management measures, including, <i>inter alia</i> , catch limits and effort limits. Such measures should remain in force until there are sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks, whereupon conservation and management measures based on that assessment should be implemented. Management measures should, if appropriate, allow for the gradual development of the fisheries.		
Relevance:	Not relevant This clause is only applicable for new or exploratory fisheries. While ADFG has a regulatory process in place for new or exploratory fisheries, 5 AAC 39.222(d)(1)(D)(1), the reality is that all salmon resources are fully allocated.		
Evaluation Parameters			
Process:			
For new or exploratory fisheries, there is a process that allows immediate application of the PA, including catch and effort limits, and the possible adverse impact of such fisheries on the long-term sustainability of the stocks.			☐
EVIDENCE:			
Current status/Appropriateness/Effectiveness:			
There is evidence that catch and effort limits have been implemented, and other management measures, including the assessment of possible adverse impacts, have been performed for these fisheries.			☐
EVIDENCE:			
Evidence Basis:			
The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that in the case of new or exploratory fisheries, the fishery management organization adopts, as soon as possible, cautious conservation and management measures, including, <i>inter alia</i> , catch and effort limits. Such measures remain in force until there are sufficient data to allow assessment of the impact of the fisheries on the long-term sustainability of the stocks, whereupon conservation and management measures based on that assessment are implemented. Management measures should, if appropriate, allow for the gradual development of the fisheries. Examples may include various data or scientific reports.			☐
EVIDENCE:			
References:			
Numerical score:	$\text{Starting score} - \left(\text{Number of EPs NOT met} \times 3 \right) = \text{Overall score}$		
	$10 - (\quad \times 3) = \text{NA}$		
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			--
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			--
Non-conformance Number (if applicable):			--

9.4 Section C: Management Measures, Implementation, Monitoring, and Control

9.4.1 Fundamental Clause 8. Management measures

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.

9.4.1.1 Supporting Clause 8.1.

8.1.	Conservation and management measures shall be designed to ensure the long-term sustainability of fishery resources at levels which promote optimum utilization, and are based on verifiable and objective scientific and/or traditional, fisher, or community sources.
Relevance:	Relevant.
Evaluation Parameters	Met?
Process: <i>The process by which management measures are developed for the fishery utilizes the best scientific evidence available, including traditional sources where these are verifiable, and also considers the cost-effectiveness and social impact of potential new measures. The assessment team shall provide evidence for the main type of management measures present in the fishery. Some of the main examples may include (but are not limited to) legal gear specifications, permit requirements, observer requirements, reporting requirements, limited access, vessel license limitations, size limits, sex restrictions, total allowable catch, in season adjustments, fishing seasons, geographical registrations areas, bycatch reduction devices, gear modification, minimizing waste and ghost fishing, closed waters, catch limits for other fisheries, and bycatch management.</i>	X
EVIDENCE: There are four layers of authority by which fishery management measures are established in Alaska; the state's constitution, the state legislature, the Board of Fish and the Department of Fish and Game. The Alaska State Constitution Section 4 states "Sustained Yield. Fish, forests, wildlife, grasslands, and all other replenishable resources belonging to the State shall be utilized, developed, and maintained on the sustained yield principle, subject to preferences among beneficial uses". The Policy for the Management of Sustainable Salmon Fisheries (5 AAC 39.22), directs management measures to ensure sustainability of yield. The Policy is implemented through the various fishery management plans for different fisheries and areas of the state. The Alaska Legislature has passed a suite of statutes under Title 16 that provides "General Provisions" to empower and guide the Board of Fish and Department in their management. Examples of Title 16 statutes include: • AS 16.05.055. The authority to require on-board observers • AS 16.05.060. The authority for the Commissioner to issue Emergency Orders. • AS 16.05.180. The authority to inspect vessels and processing plants without warrant. • AS 16.05.270. the authority for the Commissioner to delegate his authority. • AS 16.05.450. The authority for the Commissioner issue licenses. • AS 16.05.475. The requirement to registrar fishing vessels. • AS 16.05.490. The requirement to license a fishing vessel. • AS 16.05.495. Vessel license exemption. • AS 16.05.520. The requirement to display a number plate on a fishing vessel. • 16.05.680. Define a set of unlawful practices. • AS 16.05.690. The requirement to maintain records of purchases. Legislation was passed in 1973 to establish a "limited entry" system to allow the state to limit the number of participants in a specific	

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

fishery. State statute AS 16.43.140 states,

“After January 1, 1974, a person may not operate gear in the commercial taking of fishery resources without a valid entry permit or a valid interim-use permit issued by the commission”.

The Commission established an “Optimum Number” of permits for each salmon fishery through its research on the economics and management needs of that fishery.

One key statute is AS 16.05.251; this statute established the “Third” level of authority by establishing and empowering the Board of Fish. Several features of the Board of Fish’s authority are:

- To establish refuges reserves and sanctuaries.
- Establish open and closed seasons and areas.
- Set quotas, harvest levels, size and sex limitations. and bag limits
- Establish methods and means for the pursuit, capture and transport fish.
- Establish nonexclusive, exclusive and super-exclusive registration areas or commercial fishing.

This, statute also established the power of the Board of Fish to develop management plans and allocate fishery resources among personal use, sport, guided sport, and commercial fisheries under state law. When developing such plans and deciding how the conservation burden and harvest will be shared, the Board uses the following criteria:

- The history of each personal use, sport, and commercial fishery.
- The characteristics and number of participants in the fisheries.
- The importance of each fishery for providing residents the opportunity to obtain fish for personal and family consumption.
- The availability of alternative fisheries resources.
- The importance of each fishery to the economy of the state.
- The importance of each fishery to the economy of the region and local area in which the fishery is located.
- The importance of each fishery in providing recreational opportunities for residents and non- residents.

The Board of Fish has established an extensive set of regulations¹⁶⁰ to, among other things:

- Define and describe Areas e.g. Southeast, Yakutat, Prince William Sound, Kodiak, Bristol Bay.
- Define and describe Fishing Districts, Sections and Sub-districts with the Areas and water closed to fishing.
- Define fishing seasons, fishing periods.
- Define and specify the types of legal fishing gear and how can be fished.
- Define and describe areas for harvesting surplus hatchery fish that are not caught in common property fishing areas.
- Create management plans to guide ADFG’s in-season management so as to achieve conservation and allocative goals.
- Establish physical dimensions of vessels that are allowed to participate in commercial fisheries.
- Provide specific requirements for registration, licensing, reporting, inspection of vessels.

The fourth layer is the Department of Fish and Game. The key areas of responsibility for ADFG are to conduct scientific stock status evaluations, establish escapement goals based on the best available scientific data, and to manage the fisheries so as to achieve these escapement goals and implement Board of Fish Management Plans.

Current status/Appropriateness/Effectiveness:

There is evidence that the overall framework of management measures in place is effective at achieving the long-term optimum yield, which is defined by the FAO as “the harvest levels for a species that achieves the greatest overall benefits,

X

¹⁶⁰ Copies of these regulations can be found at <https://www.adfg.alaska.gov/index.cfm?adfg=fishregulations.commercial>

8.1.	Conservation and management measures shall be designed to ensure the long-term sustainability of fishery resources at levels which promote optimum utilization, and are based on verifiable and objective scientific and/or traditional, fisher, or community sources.		
<i>including economic, social and biological considerations.” If the stock has been maintained above the limit reference point, this shall be taken as evidence that management measures are effective in avoiding overfishing.</i>			
EVIDENCE: The two best lines of evidence that the overall management framework has been effective in obtaining long-term optimal yield are the history of achieving escapement goals (Munro 2024) coupled with the exceptionally long history of the harvest.			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that conservation and management measures are designed to ensure the long-term sustainability of fishery resources at levels which promote optimum utilization, and are based on verifiable and objective scientific and/or traditional, fisher, or community sources. Examples may include reports, fishery management plans, regulations, or other management measures.</i>			☒
EVIDENCE: Here is a substantial quantity of evidence to substantiate that the conservation and management measures have promoted long term sustainability that is verifiable. We cite the extensive library of annual Area Management Reports, stock status and escapement goal evaluation reports, BOF Management Plans and ADFG reports at BOF meetings. All of these documents are available on-line			
References:	Munro, A.R. 2024. Summary of Alaska’s 2023 Pacific salmon escapement and commercial harvest. NPAFC Doc. 2152. 13 pp. Alaska Department of Fish and Game https://npafc.org .		
Numerical score:	Starting score 10	– (0 x 3) =	Overall score 10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Full Conformance
Non-conformance Number (if applicable):			

9.4.1.2 Supporting Clause 8.1.1.

8.1.1.	When evaluating alternative conservation and management measures, the fishery management organization shall consider their cost-effectiveness and social impact.			
Relevance:	Relevant			
Evaluation Parameters				Met?
Process: <i>The process by which management measures are developed for the fishery allows for consideration of the cost effectiveness and social impact of potential new or modified management measures.</i>				X
EVIDENCE: The BOF has the power to allocate fishery resources among personal use, sport, guided sport, and commercial fisheries under state law (AS 16.05.251). The same law also specifies that the BOF adopt criteria for allocating fishery resources to use as appropriate to particular allocation decisions. The BOF adopted the same criteria specified under state law into regulations to be used when it allocates resources among fisheries (5 AAC 39 .205, 5AAC 77.007, and 5 AAC 75 .01). These criteria include consideration of economic and social impacts.				
Current status/Appropriateness/Effectiveness: <i>There is evidence for the consideration of the cost-effectiveness and social impact of potential new or modified management measures.</i>				☒
EVIDENCE: Alaska Statute is AS 16.05.251 established the power of the Board of Fish to allocate fishery resources among personal use, sport, guided sport, and commercial fisheries under state law. When developing such plans and deciding how the conservation burden and harvest will be shared, the Board uses the following criteria: ▪ The history of each personal use, sport, and commercial fishery. ▪ The characteristics and number of participants in the fisheries. ▪ The importance of each fishery for providing residents the opportunity to obtain fish for personal and family consumption. ▪ The availability of alternative fisheries resources. ▪ The importance of each fishery to the economy of the state. ▪ The importance of each fishery to the economy of the region and local area in which the fishery is located. ▪ The importance of each fishery in providing recreational opportunities for residents and non- residents.				
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that in the evaluation of alternative conservation and management measures, their cost-effectiveness and social impact are considered. Examples may include reports, fishery management plans, regulations or other management measures.</i>				X
EVIDENCE: There is substantial evidence to support full conformance. First is the record of decisions that is published ADFG’s Board of Fish web site. A timely example is the Board of Fish deliberation over allocation of the Chinook Salmon catch in Southeast Alaska between sport and commercial fishing interests in January 2025 ¹⁶¹ . The second substantial line of evidence is the large number of Management Plans the Board of Fish has developed to address allocation of the conservation burden and harvest sharing among user groups. A timely example of the Board’s deliberation over the Kenai River Chinook Salmon Management Plan in February 2024 ¹⁶²				

¹⁶¹ <https://www.adfg.alaska.gov/index.cfm?adfg=fisheriesboard.meetinginfo&date=01-28-2025&meeting=ketchikan>

¹⁶² <https://www.adfg.alaska.gov/index.cfm?adfg=fisheriesboard.meetinginfo&date=02-23-2024&meeting=anchorage>

8.1.1.	When evaluating alternative conservation and management measures, the fishery management organization shall consider their cost-effectiveness and social impact.									
Numerical score:	Starting score		Number of EPs <u>NOT</u> met						Overall score	
	10	– (	0	x	3	) =	10			
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)								High		
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)								Full Conformance		
Non-conformance Number (if applicable):										

9.4.1.3 Supporting Clause 8.1.2.

8.1.2.	Responsible fisheries management organizations shall adopt and implement measures necessary to ensure the management of bycatch and reduction of discards as part of fisheries management (1) in accordance with the PA, as reflected in Article 6 of the UN Fish Stocks Agreement, and as set out in Article 6.5 and 7.5 of the Code; (2) in accordance with the responsible use of fish as set out in the Code; and (3) based on the best scientific evidence available, taking into account fishers' knowledge.
Relevance:	Relevant
Evaluation Parameters	
Process: <i>The responsible fisheries management organizations has adopted and implemented effective measures necessary to ensure the management of bycatch and reduction of discards as part of fisheries management.</i>	X
EVIDENCE: Recognizing a goal to minimizing by-catch, the Board of Fish adopted a regulation (5 AAC 93.310) to require operators of all salmon fishing gear to minimize incidental harvest of non-target species. While by-catch in the Alaska salmon fishery is generally considered to not be a problem because of the kinds of gear used and the targeting of fishing effort at times and places where salmon are abundant, there are situations where by-catch is/has been an issue. Examples include: • In Southeast and Yakutat areas, the troll fishery catches a variety of groundfish in addition to salmon. To address the issue of discards, the Board of Fish permitted retention of incidentally caught groundfish, and in some cases set allocation goals between the troll fleet and other gear groups. • In Southeast the BOF has closed areas to trolling where high concentrations of lingcod have been found. • In Kodiak, the Board of Fish has imposed non-retention of Chinook Salmon on the purse seine fishery in areas where Chinook Salmon Stocks of Concern may be caught while targeting Pink or Sockeye salmon. • In the Yukon area, concern for Chinook Salmon has led to the use of fish wheels to harvest Chum Salmon while permitting the release of Chinook. The potential for lost or abandoned fishing gear and subsequent effects of ghost fishing due to this lost gear would seem to be very small for purse seines, troll gear, and fish wheels. A key regulation to avoid lost gear is that all commercial fishing gear must be tended. Gill nets would appear to have the greatest potential for both loss and ghost fishing. Lost or abandoned salmon gill net gear has been addressed in the Bristol Bay salmon fishery, where a regulation (5 AAC 06.331(t) requires permit holders to report a lost a gillnet, or portion of a gillnet, to the local ADFG office within 15 hours of the loss.	
Current status/Appropriateness/Effectiveness: <i>There is evidence of adoption and implementation of effective measures to ensure the management of bycatch and reduction of discards as part of fisheries management (1) in accordance with the PA, as reflected in Article 6 of the UN Fish Stocks Agreement, and as set out in Article 6.5 and 7.5 of the Code; (2) in accordance with the responsible use of fish as set out in the Code; and (3) based on the best scientific evidence available, taking into account fishers' knowledge. Please note that traditional knowledge should be verifiable. The strategy to ensure the management of bycatch and reduction of discards as part of fisheries management is being implemented successfully (e.g., there is a well-known track record of consistently setting conservative bycatch limits based on quality information and advice about bycatch); or bycatch is minimized to the greatest extent possible, especially for vulnerable species such as sharks, seabirds, turtles, and marine mammals, through mitigation measures that have been shown to be highly effective (e.g., observer coverage and procedures, bycatch caps, utilization measures, full catch accounting, on-deck techniques, avoidance mechanisms and gear technology, etc.). Also, the fishery is not a leading cause of a high level of mortality for any species of concern (e.g., not a Category I fishery for marine mammal bycatch as designated by the National Marine Fisheries Service).</i>	☒
EVIDENCE:	

8.1.2. Responsible fisheries management organizations shall adopt and implement measures necessary to ensure the management of bycatch and reduction of discards as part of fisheries management (1) in accordance with the PA, as reflected in Article 6 of the UN Fish Stocks Agreement, and as set out in Article 6.5 and 7.5 of the Code; (2) in accordance with the responsible use of fish as set out in the Code; and (3) based on the best scientific evidence available, taking into account fishers' knowledge.

Board of Fish regulations and Management Plans that address the issues above are current.

The Alaska gillnet fishery has been evaluated by NOAA fisheries using observers (see for example Wynne et al. (1991)) for the incidence of mortality of marine mammals and NOAA determined it is not a Category 1 fishery.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the responsible fisheries management organizations have adopted and implemented effective measures necessary to ensure the management of bycatch and reduction of discards as part of fisheries management. Examples may include stock assessment, bycatch or other ecosystem assessment reports.



EVIDENCE:

The annual reporting of bycatch in Annual management reports for the Eastern Gulf Groundfish fishery and stock assessment (Ehresmann et al. 2024), the Kodiak Area Annual Management Report (Anderson et al. 2023) and the Coast wide Chinook Salmon stock assessment report (PSC-JTCC. 2023) demonstrates that these measures have been adopted and by catch reported.

References:

Anderson, T. J., J. Jackson, and A. E. Dorner. 2023. Kodiak Management Area commercial salmon fishery annual management report, 2023. Alaska Department of Fish and Game, Fishery Management Report No. 23-23, Anchorage. <https://www.adfg.alaska.gov/FedAidPDFs/FMR23-23.pdf>

Ehresmann, R., A. Baldwin, K. Brettrager, L. Coleman, A. McCarrel, and A. Vinson. 2024. Management report for the Southeast Alaska and Yakutat commercial groundfish fisheries, 2021–2023. Alaska Department of Fish and Game, Fishery Management Report No. 24-31, Anchorage <https://www.adfg.alaska.gov/FedAidPDFs/FMR24-31.pdf>

PSC-JTCC. 2023. Annual report of catch and escapement for 202. TCCHINOOK (23)-02 Pacific Salmon Commission., Vancouver, B.C. Canada. <https://www.psc.org/publications/technicalreports/technical-committee-reports/chinook/>

Wynne, K, D. Hicks and N. Munro. 1991. 1990 Salmon gillnet fisheries observer programs in Prince William Sound and South Unimak Alaska. Final report to NOAA. Saltwater Inc. Anchorage Ak. <https://www.fisheries.noaa.gov/resource/document/1990-salmon-gillnet-fisheries-observer-programs-prince-william-sound-and-south>

Numerical score:	Starting score	Number of EPs <u>NOT</u> met					Overall score	
	10	-	(	0	x	3	) =	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)								High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)								Full Conformance
Non-conformance Number (if applicable):								

9.4.1.4 Supporting Clause 8.2.

8.2.	The fishery management organization shall prohibit dynamiting, poisoning, and other similar destructive fishing practices.		
Relevance:	Relevant.		
Evaluation Parameters			
Process: <i>There are management measures, or regulations, or laws that prohibit destructive fishing practices.</i>			Met? ☒
EVIDENCE: Alaska regulations (5AC39.150), prohibits the use of an explosive, chemical or poison in the taking of fish or shellfish is (except for the use of chemical baits or lures to attract shellfish).			
Current status/Appropriateness/Effectiveness: <i>The regulations or laws effectively prohibit dynamiting, poisoning, and other similar destructive fishing practices.</i>			☒
EVIDENCE: All available evidence suggests that such practices are rarely encountered.			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization prohibits dynamiting, poisoning, and other similar destructive fishing practices. Examples may include laws, fishery management plans, regulations, and enforcement data.</i>			☒
EVIDENCE: There is suffice evidence from discussions with ADFG and enforcement staff to have confidence to conclude that such practice's rarely occur.			
References:			
Numerical score:	Starting score	Number of EPs <u>NOT</u> met	Overall score
	10	0	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Full Conformance
Non-conformance Number (if applicable):			

9.4.1.5 Supporting Clause 8.3.

8.3.	The fishery management organization shall seek to identify domestic parties having a legitimate interest in the use and management of the fishery. When deciding on use, conservation, and management of the resource, due recognition shall be given, where relevant, in accordance with national laws and regulations, to the traditional practices, needs, and interests of indigenous people and local fishing communities which are highly dependent on these resources for their livelihood. Arrangements shall be made to consult all the interested parties and gain their collaboration in achieving responsible fisheries.
Relevance:	Relevant.
Evaluation Parameters	Met?
Process: <i>There is a process that allows for identifying and consulting with domestic parties (giving due recognition where relevant, in accordance with national laws and regulations, to the traditional practices, needs, and interests of indigenous people and local fishing communities which are highly dependent on these resources for their livelihood) having a legitimate interest in the use and management of the fisheries resource.</i>	☒
EVIDENCE: Four general classes of salmon users have been identified; commercial, subsistence recreational, and personal use. Both state (AS 16.05.258 (b)) and federal (ANILCA Title VIII) laws prioritize subsistence uses over all other consumptive uses of fish and game. State law (16.05.251(e)) requires that allocation decisions deal with identifying parties with a legitimate interest in the use and management of the fishery. The establishment of Local Advisory Committees that are charged with reviewing proposed regulations and providing their views to the Board of Fish provide on avenue for participation in the Board of Fish process. The Board of Fish process also provides opportunity for all interested parties to also testify about proposed regulations	
Current status/Appropriateness/Effectiveness: <i>In accordance with national laws and regulations, there is evidence that domestic parties having a legitimate interest in the use and management of the fishery (as described above) have been identified and encouraged to collaborate in the fisheries management process.</i>	☒
EVIDENCE: There is substantial evidence that all interested parties have been encouraged and that they do participate in the Board of Fish process; that evidence is the records of Board of Fish meeting ¹⁶³ s.	
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization seeks to identify domestic parties having a legitimate interest in the use and management of the fishery. When deciding on use, conservation, and management of the resource, due recognition is given, where relevant, in accordance with national laws and regulations, to the traditional practices, needs, and interests of indigenous people and local fishing communities which are highly dependent on these resources for their livelihood. Arrangements are made to consult all the interested parties and gain their collaboration in achieving responsible fisheries. Examples may include laws, fishery management plans, regulations, and meeting records.</i>	☒
EVIDENCE: The evidence demonstrates that Alaska's fishery management organization has established robust mechanisms to identify domestic stakeholders—especially Indigenous peoples and local fishing communities—who possess a legitimate interest in the use and management of fishery resources. The documentation confirms that the organization adheres to national legal frameworks and internal regulations that mandate the recognition of traditional practices and local knowledge.	

¹⁶³ <https://www.adfg.alaska.gov/index.cfm?adfg=fisheriesboard.meetinginfo>

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

There are multiple layers of legal instruments and fishery management plans provide the structural basis for this engagement. National laws, along with specific regulatory measures, ensure that decisions regarding the use, conservation, and management of fisheries are made in accordance with criteria that respect traditional practices. These instruments require—with demonstrable evidence—the active inclusion of domestic parties, ensuring that policies are not only scientifically grounded but also culturally and economically mindful of those who depend on these resources

The evidence further substantiates that the fishery management organization has robust and transparent consultation processes in place. Meeting records, regulatory submissions, and formal public testimony (often linked to Indigenous and local viewpoints) are part of the consulted documentation. Such records reveal that the organization consistently arranges for the participation of domestic parties at all relevant decision-making junctures. These consultation mechanisms are designed to guarantee that indigenous practices, needs, and interests are comprehensively integrated into resource management decisions.

One of the most significant findings is the deliberate integration of Traditional Knowledge (TK) and Local Knowledge (LK) into the planning, conservation, and management processes. The reassessment report details how organic, community-based insights—gained over generations—are brought into dialogue with modern scientific methods. This dual approach ensures that the strategies adopted are not only effective from a biological and ecological perspective but also culturally respectful and supportive of sustainable livelihoods.

In conclusion, the evidence is both comprehensive and robust. It confirms that Alaska’s fishery management organization makes a concerted effort to identify domestic stakeholders with legitimate interests. More importantly, it highlights that due recognition is given—through formal laws, structured management plans, and regular consultative processes—to address the traditional practices and needs of Indigenous peoples and local communities. Such a methodology supports responsible management and conservation while reinforcing long-term sustainability in alignment with national legal and regulatory frameworks.

References:

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x 3	)	=	Overall score
	10		(	0		)		10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)								High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)								Full Conformance
Non-conformance Number (if applicable):								

9.4.1.6 Supporting Clause 8.4.

8.4.	Where excess capacity exists, mechanisms shall be established to reduce capacity to levels commensurate with sustainable use of the resource. Fleet capacity operating in the fishery shall be measured and monitored. The fishery management organization shall maintain, in accordance with recognized international standards and practices, statistical data, updated at regular intervals, on all fishing operations and a record of all authorizations to fish allowed by them.
Relevance:	Relevant
Evaluation Parameters	
Process: <i>There is a system to measure fleet capacity and maintain regularly updated data on all fishing operations. Research has been conducted to determine or estimate the fishing capacity commensurate with the sustainable use of the resource. There are mechanisms in place to measure the total fishing capacity within the unit of certification, and to reduce this capacity if it is determined to exceed the sustainable level.</i>	☒
EVIDENCE: Legislation was passed in 1973 to establish a “limited entry” system to allow the state to limit the number of participants in a specific fishery. State statute AS 16.43.140 states, “After January 1, 1974, a person may not operate gear in the commercial taking of fishery resources without a valid entry permit or a valid interim-use permit issued by the commission”. The Commission established an “Optimum Number” of permits for each salmon fishery through its research on the economics and management needs of that fishery. ¹⁶⁴ Since implementation of limited entry, other actions have been taken to improve economic viability of the fishing fleet, for example, in 2008, the Southeast Revitalization Association conducted a permit buy-back program in the Southeast Alaska salmon purse seine fishery which resulted in the purchase and subsequent relinquishing of 35 limited entry permits to CFEC.	
Current status/Appropriateness/Effectiveness: <i>There is evidence of the size of fleet capacity, and of data describing fishing operation, and that the mechanisms described above are successful at maintaining the effective fishing capacity of the unit of certification at a level commensurate with the sustainable use of the resource. Management mechanisms, which restrict the application of fishing capacity, such as quotas, shall be considered valid mechanisms in relation to this parameter. The core emphasis of this requirement is to ensure that exploitation is sustainable. Assessment teams should ensure that fisheries are within catch limit recommendations to determine whether excess capacity is having an effect on resource overexploitation.</i>	☒
EVIDENCE: The Limited Entry Commission has conducted the research needed to evaluate the optimum number of vessels for each all of Alaska’s salmon fisheries and established those limits ¹⁶⁵ .	
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that fleet capacity operating in the fishery is monitored and measured, and statistical data on all fishing operations allowed is updated and maintained. Where excess capacity exists, mechanisms are established to reduce capacity to levels commensurate with sustainable use of the resource. Examples may include fleet reports or other documents or reports.</i>	☒
EVIDENCE: There are a large number of reports regarding fleet participation and earning used by the CFEC to Alaska’s salmon fleet ¹⁶⁶ ; an example of these reports is and Gho and Iverson (2013).	

¹⁶⁴ Various reports prepared by the Commission can be found at: <https://www.cfec.state.ak.us/Publications/salmon.htm>

¹⁶⁵ Data and reports in support of the Commission’s actions can be found at: <https://www.cfec.state.ak.us/index.htm>

¹⁶⁶ Copies of these reports are available at: <https://www.cfec.state.ak.us/Publications/salmon.htm>

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

References: Gho, M and K. Iverson. 20133. Kodiak Salmon Set Gillnet Permit Stacking. CFEC Report No 13-4-N.).CFEC Report No 13-4-N Alaska Commercial Fisheries Entry Commission. 8800 Glacier Highway, Suite 109. Juneau, Alaska <https://www.cfec.state.ak.us/RESEARCH/13-4N/CFEC%20Report%2013-4.pdf>.

Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10

Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)	High

Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)	Full Conformance

Non-conformance Number (if applicable):	

9.4.1.7 Supporting Clause 8.4.1.

8.4.1.	Studies shall be promoted that provide an understanding of the costs, benefits, and effects of alternative management options designed to rationalize fishing, especially options relating to excess fishing capacity and excessive levels of fishing effort.		
Relevance:	Relevant.		
Evaluation Parameters	Met?		
Process: <i>There is a need and a process that allows, as appropriate, for studies to understand the costs, benefits, and effects of alternative management options designed to rationalize fishing.</i>			☒
EVIDENCE: Alaska Statute 16.43.100 Establishes the Alaska Limited Entry Commission and authorizes it do all things necessary (e.g. research alternative management measures) to understand the cost, benefits and effects of alternative management strategies relating to limiting entry into Alaska fisheries. By Statute (AS 16.43.29). The legislature set three standards for the Commission to use when determining the optimum number of permits for a fishery. The first standard seeks the number of permits sufficient to maintain an economically healthy fishery. This requirement set the stage for the Commission to conduct research into the economics of the salmon fisheries.			
Current status/Appropriateness/Effectiveness: <i>There is evidence for studies conducted on alternative management options designed to rationalize fishing.</i>			☒
EVIDENCE: Commission staff have produced numerous reports on the economics of Alaska's salmon fisheries ¹⁶⁷ see for example Shriver and Iverson (2012).			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that studies are promoted that provide an understanding of the costs, benefits, and effects of alternative management options designed to rationalize fishing, especially options relating to excess fishing capacity and excessive levels of fishing effort. Examples may include various evaluation or reports on fishing rationalization.</i>			☒
EVIDENCE: The Commission has set an optimum number of permits for all of Alaska's salmon fisheries. Prior to establishing an optimum number commission staff researched and reported on the economics of the fishery as required by statute. An example of this research is Shriver and Iverson (2012). Alternative management options such as regulatory management plans, and active in-season management are also in place to "rationalize fishing" and their effectiveness is studied so that modifications can be made.			
References:	Shriver, J. and K. Iverson. 2012.CFEC Permit Holdings, Harvests, and Estimated Gross Earnings by Resident Type in the Bristol Bay Salmon Gillnet Fishery. CFEC Report 12-04-N. Alaska Commercial Fisheries Entry Commission. 8800 Glacier Highway, Suite 109. Juneau, Alaska. https://www.cfec.state.ak.us/RESEARCH/12-4N/Report_12_04_N.pdf		
Numerical score:	Starting score 10	- (Number of EPs <u>NOT</u> met 0	x 3) = Overall score 10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Full Conformance

¹⁶⁷ Copies of reports can be found at: <https://www.cfec.state.ak.us/Publications/salmon.htm>

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

Non-conformance Number (if applicable):	

9.4.1.8 Supporting Clause 8.5.

8.5.	Technical measures regarding the stock under consideration shall be taken into account, where appropriate, in relation to fish size, mesh size, gear, closed seasons or areas, areas reserved for particular (e.g., artisanal fisheries), and protection of juveniles or spawners.				
Relevance:	Relevant				
Evaluation Parameters					Met?
Process: <i>The management system has taken into account technical measures, where and as appropriate (i.e., some fisheries do not have the requirement for a minimum fish size), to the fishery and stock under assessment, in relation to fish size, mesh size, gear, closed seasons, closed areas, areas reserved for particular (e.g., artisanal) fisheries, and protection of juveniles or spawners.</i>					☒
EVIDENCE: The Alaska Board of Fisheries has considered and taken into account numerous technical measures tailored specifically for each salmon fishery in Alaska ¹⁶⁸ . These measures have included very specific criteria including the types of legal gear, the specification for fishing gear (e.g. gillnet mesh size, depth and length; purse seine mesh size depth and length) When seasons open and close, areas closed to fishing to include preserves near river mouths, size limits for hook and line fisheries, the prohibition of taking juveniles.					
Current status/Appropriateness/Effectiveness: <i>Technical measures are related to sustainability objectives, ensuring sustainable exploitation of the target species, and minimizing the potential negative impacts of fishery activities on non-target species, ETP species, and the physical environment.</i>					☒
EVIDENCE: Technical measures established by the Board of Fisheries are designed to foster sustainable fisheries measures, for example: • The areas around the mouths of streams are closed to commercial fishing in order to prevent overfishing of stocks when the fish aggregate into large schools prior to ascending the rivers to spawn. • Gillnet mesh size specifications are designed to selectively harvest fish by species given differences in average sizes. This tactic avoids larger or smaller fish when stocks of different species are mixed in the fishing areas. • Defining areas where fishing may occur allows ADFG to target fishing effort on abundant stocks while avoiding less abundant stocks. • Limiting the length and depth of nets constrains fishing effort of individual boats and when coupled with limited entry constrains fleet effort which makes it possible for management to predict the consequences of allowing a specific amount of fishing time in an area.					
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that technical measures regarding the stock under consideration are taken into account, where appropriate, in relation to fish size, mesh size, gear, closed seasons, closed areas, areas reserved for particular (e.g., artisanal) fisheries, and protection of juveniles or spawners. Examples may include fishery management plans, regulations or various other reports.</i>					☒
EVIDENCE: That technical measures regarding the stock under consideration are taken into account is clear by reading the narratives in Annual Area Management Reports see for example Elison et al. (2024).					
References:	Elison, T., A. Tiernan, T. Sands, S. Vega, and P. Stacey. 2024. 2023 Bristol Bay annual management report. Alaska Department of Fish and Game, Fishery Management Report No. 24-11, Anchorage. https://www.adfg.alaska.gov/FedAidPDFs/FMR24-11.pdf				
Numerical score:	Starting score	–	Number of EPs <u>NOT</u> met	x 3	= Overall score

¹⁶⁸ The details for these technical measures are described in commercial fishing regulations for each area.
<https://www.adfg.alaska.gov/index.cfm?adfg=fishregulations.commercial>

8.5.	Technical measures regarding the stock under consideration shall be taken into account, where appropriate, in relation to fish size, mesh size, gear, closed seasons or areas, areas reserved for particular (e.g., artisanal fisheries), and protection of juveniles or spawners.				
	10	(	0	)	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)					High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)					Full Conformance
Non-conformance Number (if applicable):					

9.4.1.9 Supporting Clause 8.5.1.

8.5.1	Appropriate measures shall be applied to minimize catch, waste, and discards of non-target species (both fish and non-fish species), and impacts on associated, dependent, or endangered species.		
Relevance:	Relevant		
Evaluation Parameters			Met?
Process: <i>There is a mechanism by which management measures are developed to minimize the catch, waste and discarding of non-target species and the impact of the fishery on associated, dependent, and ETP species. This system shall include the development of specific management objectives.</i>			☒
EVIDENCE: The primary mechanism by which management measures are developed to minimize the catch, waste and discarding of non-target species is through the Alaska Board of Fish. In-season management authority allows ADFG the impose several kinds of measure to restrict the harvest of non-target species. In the Southeast and Yukon areas, the second process is through the Pacific Salmon Treaty. The third process is through consultations under the U.S. Endangered Species Act and Marine Mammal Protection Act.			
Current status/Appropriateness/Effectiveness: <i>There are measures in place to minimize catch, waste, and discards of nontarget species (both fish and non-fish species). These measures are considered effective at achieving the specific management objectives described in the process parameter. There are measures in place to minimize impacts on associated, dependent, or endangered species. These measures are considered effective at achieving the specific management objectives described in the process parameter.</i>			☒
EVIDENCE: Alaska Regulation 5 AAC 39.222 requires that “salmon escapement and harvest management decisions should be made in a manner that protects non-target salmon stocks or species”. Regulation (5 AAC 93.310.) requires operators of all salmon fishing gear to minimize incidental harvest of non-target species. Alaska Statute (AS 16.05.831) prohibits waste of salmon harvested in all Alaska fisheries. Within the states Board of Fish process regulations have been developed address minimize the catch, waste and discarding of non-target species. - Numerous BOF regulations that define legal gear, areas closed to fishing and fishing seasons all serve to target effort in times and places where salmon occur in abundance. - Board of Fish Management Plans are typically crafted to avoid the catch of Stock of Concern. ADFG’s in-season management authority is often used in three ways to minimize the incidental harvest of non-target species - to restrict what types of gear are permitted (e.g. mesh size of gillnets), - to close areas so as to avoid non-target species, - To require non-retention of non-target species in the Kodiak and Southeast areas. In the Pacific Salmon Treaty Process there is cap on the total morality for Chinook Salmon by all gear types. This cap includes incidental mortality. Consultations under the Endangered Species Act places a cap on the number of ESA listed Chinook that may be caught and on exploitation rate the fishery may exert in the Southeast Chinook Salmon fishery. The Marine Mammal Protection Act prohibits the take of marine mammals.			

8.5.1	Appropriate measures shall be applied to minimize catch, waste, and discards of non-target species (both fish and non-fish species), and impacts on associated, dependent, or endangered species.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that appropriate measures are applied to minimize catch, waste and discards of non-target species (both fish and non-fish species), and impacts on associated, dependent, or endangered species. Examples may include various stock and ecosystems assessment reports.


EVIDENCE:

Annual Management Reports such as Thynes et al. (2023), Anderson et al. (2023) and Lipka and Stumpf (2025) detail in-season actions to minimize the catch of non-target species. The Pacific Salmon Commission's Chinook Technical Committee reports on the catch and exploitation rates of Chinook Salmon listed under the ESA (PSC-JTCC 2023).

References:

Anderson, T. J., J. Jackson, and A. E. Dorner. 2023. Kodiak Management Area commercial salmon fishery annual management report, 2023. Alaska Department of Fish and Game, Fishery Management Report No. 23-23, Anchorage. <https://www.adfg.alaska.gov/FedAidPDFs/FMR23-23.pdf>

Lipka, C., and L. Stumpf. 2025. Upper Cook Inlet commercial fisheries annual management report, 2023. Alaska Department of Fish and Game, Fishery Management Report No. 25-05, Anchorage. <https://www.adfg.alaska.gov/FedAidPDFs/FMR25-05.pdf>

PSC-JTCC. 2023. Annual report of catch and escapement for 2022. TCCHINOOK (23)-02 Pacific Salmon Commission., Vancouver, B.C. Canada. <https://www.psc.org/publications/technicalreports/technical-committee-reports/chinook/>

Thynes, T. S., J. A. Bednarski, S. K. Conrad, A. W. Dupuis, S. N. Forbes, B. L. Meredith, A. W. Piston, P. G. Salomone, and N. L. Zeiser. 2025. Annual management report of the 2023 Southeast Alaska commercial purse seine and drift gillnet fisheries. Alaska Department of Fish and Game, Fishery Management Report No. 25-01, Anchorage. <https://www.adfg.alaska.gov/FedAidPDFs/FMR25-01.pdf>

Numerical score:	Starting score	- (Number of EPs <u>NOT</u> met x 3) =				Overall score
	10		0			10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)						High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)						Full Conformance
Non-conformance Number (if applicable):						

9.4.1.10 Supporting Clause 8.6.

8.6	Fishing gear shall be marked in accordance with the State's legislation in order that the owner of the gear can be identified. Gear marking requirements shall take into account uniform and internationally recognizable gear marking systems.		
Relevance:	Relevant		
Evaluation Parameters			
Process: <i>There is regulation for gear marking.</i>			☒
EVIDENCE: By statute, (AS16.05.510 and AS 16.05.520)) salmon fishing vessels are required to be licensed by the State of Alaska, and to display their permanent vessel license plate. 5 AAC 24.334 requires set and drift gill nets be marked to identify the owner/operator. 5 AAC 39.734 requires the marking of commercial gear used in freshwater commercial fisheries.			
Current status/Appropriateness/Effectiveness: <i>Fixed gear is marked according to national legislation, and lost fixed gear can be identified back to owner.</i>			☒
EVIDENCE: Set gillnets and fishwheels are the only fixed salmon fishing gear in Alaska and is marked in accordance with Alaska Statutes AS16.05.510 and AS 16.05.520.			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that fishing gear is marked in accordance with State's legislation in order that the owner of the gear can be identified. Gear marking requirements take into account uniform and internationally recognizable gear marking systems. Examples may include various fleet reports and regulations.</i>			☒
EVIDENCE: There is a very high degree of compliance with gear marking requirements, largely because of the high degree of fleet monitoring by ADFG and Department of Public safety staff and the fact that violations are very easily observed.			
References:			
Numerical score:	Starting score	Number of EPs <u>NOT</u> met	Overall score
	10	0 x 3	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Full Conformance
Non-conformance Number (if applicable):			

9.4.1.11 Supporting Clause 8.7.

8.7.	The fishery management organization and relevant groups from the fishing industry shall measure performance and encourage the development, implementation, and use of selective, environmentally safe, and cost-effective gear, technologies, and techniques that are sufficiently selective as to minimize catch, waste, discards of non-target species (both fish and non-fish species), and impacts on associated or dependent predators. The use of fishing gear and practices that lead to discarding the catch shall be discouraged, and the use of fishing gear and practices that increase survival rates of escaping fish shall be promoted. Inconsistent methods, practices, and gears shall be phased out accordingly.
Relevance:	Relevant.
Evaluation Parameters	Met?
Process: <i>The management system and relevant groups from the fishing industry have encouraged the development of technologies and operational methods to reduce waste and discard of the target species. Relevant groups include fishers, processors, distributors, and marketers. There are mechanisms in place by which the selectivity, environmental impact, and cost-effectiveness of gears included in the unit of certification are measured.</i>	☒
EVIDENCE: The Statute that prohibits waste of harvested salmon and the need to comply with waste water discharge permits for salmon processors has led industry to develop methods and practices to reduce waste and discards of the target species. This has been particularly apparent in the high-volume fisheries.	
Current status/Appropriateness/Effectiveness: <i>Such technologies and operational methods have been implemented. The methods in use are effective in reducing waste and discards of the non-target species. There is evidence that the gears used in the fishery are appropriate, in terms of selectivity, environmental impact, and cost-effectiveness, as assessed by the responsible scientific authority of the fishery. Methods shall be considered successful if there is evidence that the fishery under assessment is not causing significant risk of overfishing to non-target species.</i>	☒
EVIDENCE: There has been a trend in the Alaska salmon processing industry to move to full utilization of carcasses. In general, - heads are used to make oil supplements, - guts, bones, skins and various trim are frozen and sold to pet food companies and - skins, scales, bones and fins can be made into collagen. Specific examples provided by processors include: - The Trident plant in Cordova is committed to full utilization. The plant produces high-quality wild salmon oil for human health and pet supplements, hydrolysates for animal feed and organic fertilizers. - The Trident Naknek freezer and meal plant are capable of complete utilization of the fish, producing a range of high-quality products of fresh and frozen H&G, vacuum packed and IQF fillets, frozen roe, fish meal, and fish oil. - The Haines Packing Company uses salmon byproducts to create Sea to Soil brand garden fertilizer, and the sale of salmon carcasses as feed for wildlife parks (i.e., Kroschel Wildlife Center)." - The Nakeen Home pack, LLC. has developed a ground salmon product for the off-cuts, trimmings and backbone meat. The also source skins to a jewelry maker in the state of Alaska and have plans to sell entrails and racks to a fertilizer company this season.	
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization and relevant groups from the fishing industry measure performance and encourage the development, implementation, and use of selective, environmentally safe, and cost effective gear, technologies and techniques, that are sufficiently selective as to minimize catch, waste, discards of non-target species (both fish and non-fish species), and impacts on associated or dependent species. Examples may include various reports, regulations, or other data.</i>	☒

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

EVIDENCE:

Fishery regulations in Alaska are extremely detailed with regard to the configuration of acceptable gear for use in each fishery, as well as how to deal with impacts on fishery resources and other users due to gear selectivity and fishing. It would be extremely difficult to circumvent this regulation, and even if such a situation occurred, the regulatory and management system would be able to effectively respond.

ADFG has participated in research programs on an international basis on issues such as fishing gear selectivity and improvements to fishing methods and strategies. The NPAFC is the primary international venue for promoting the conservation of anadromous stocks and ecologically-related species, including marine mammals, sea birds, and non-anadromous fish, in the high seas area of the North Pacific Ocean. The NPAFC encourages research programs such as fishing gear selectivity and fishing methods. It also serves as a venue for coordinating the collection, exchange, and analysis of scientific data regarding these species and coordinates high seas fishery enforcement activities by member countries

Overall, there has been little need for new research undertaken on the selectivity of traditional salmon gear types with regard to non-target species because by-catch has been demonstrated to be very low. However, research into the selectivity by size and sex of gillnet gear of the target species has been undertaken on several occasions.

Additional evidence in 8.51.

The State of Alaska, Department of Fish and Game (ADF&G) is responsible for determining and maintaining a list of endangered species in Alaska under [AS 16.20.190](#). A species or subspecies of fish or wildlife is considered endangered when the Commissioner of ADF&G determines that its numbers have decreased to such an extent as to indicate that its continued existence is threatened.

References:	
Numerical score:	$\text{Starting score} - \left(\text{Number of EPs NOT met} \times 3 \right) = \text{Overall score}$ $10 - (0 \times 3) = 10$
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)	
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)	
Non-conformance Number (if applicable):	

9.4.1.12 Supporting Clause 8.8.

8.8.	Technologies, materials, and operational methods or measures—including, to the extent practicable, the development and use of selective, environmentally safe, and cost effective fishing gear and techniques—shall be applied to minimize the loss of fishing gear, the ghost fishing effects of lost or abandoned fishing gear, pollution, and waste.					
Relevance:	Relevant.					
Evaluation Parameters						
Process: <i>There has been development of technologies, materials, and operational methods that minimize the loss of fishing gear, the ghost fishing effects of lost or abandoned fishing gear, and a system to minimize pollution and waste.</i>			☒			
EVIDENCE: All available information strongly indicates that loss of commercial salmon fishing gear is not a significant problem. As such there is little to no effort to develop new technologies, or materials to develop new highly selective, or environmentally safe fishing gear, as such this clause is not particularly relevant. We do however address the issue of possible ghost fishing. Virtually all the gear allowed in Alaska Salmon Fisheries includes purse seines, drift and set gill nets and hook and line troll gear. Three is/has been some very limited use of fish wheels and beach seines. The potential for lost or abandoned fishing gear and subsequent effects of ghost fishing due to this lost gear, is very small for purse seines, troll gear, beach seines and fish wheels. While the likelihood of losing gillnet gear is low, if lost it would likely ghost fish at least for a while. As noted earlier, commercial fishing gear in Alaska must be tended at all times. This regulation is the most important operational measure to prevent gear from becoming lost. One example of how ADFG address issues of lost or abandoned salmon gill net gear, regulation (5 AAC 06.331(t)) requires Bristol Bay permit holders to report a loss to the local ADFG office within 15 hours of the loss.						
Current status/Appropriateness/Effectiveness: <i>Technologies, materials, and operational methods that minimize the loss of fishing gear and ghost fishing by lost or abandoned gear are applied whenever appropriate. Also, these measures are effective in minimizing, to the extent practicable, pollution and waste.</i>			☒			
EVIDENCE: As stated above, the potential for lost or abandoned fishing gear and subsequent effects of ghost fishing due to this lost gear, is very small for purse seines, troll gear, fish wheels, or beach seines. While the likelihood of losing gillnet gear is low, if lost it would likely ghost fish at least for a while. As noted earlier, commercial fishing gear in Alaska must be tended at all time. This regulation is the most important operational measure to prevent gear from becoming lost						
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that technologies, materials, and operational methods or measures—including, to the extent practicable, the development and use of selective, environmentally safe, and cost-effective fishing gear and techniques—are applied to minimize the loss of fishing gear, the ghost fishing effects of lost or abandoned fishing gear, pollution, and waste. Examples may include various regulations, data, and reports.</i>			☒			
EVIDENCE: As stated above the key operational method employed in Alaska to, among other things, prevent the loss of fishing gear and subsequent ghost fishing is that gear must be tended at all times.						
References:						
Numerical score:	Starting score	– (	Number of EPs <u>NOT</u> met	x 3	) =	Overall score
	10		0			10
Corresponding Confidence Rating:						High

8.8.	Technologies, materials, and operational methods or measures—including, to the extent practicable, the development and use of selective, environmentally safe, and cost effective fishing gear and techniques—shall be applied to minimize the loss of fishing gear, the ghost fishing effects of lost or abandoned fishing gear, pollution, and waste.
(10 = High; 4 or 7 = Medium; 1 = Low)	
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)	
Full Conformance	
Non-conformance Number (if applicable):	

9.4.1.13 Supporting Clause 8.9.

8.9.	The intent of fishing selectivity and fishing impacts-related regulations shall not be circumvented by technical devices. Information on new developments and requirements shall be made available to all fishers.	
Relevance:	Relevant.	
Evaluation Parameters		Met?
Process:		
<i>There is a system that makes available information on new developments and requirements to all fishers to avoid circumvention of fishing regulations.</i>		☒
EVIDENCE:		
Fishery regulations in Alaska are extremely detailed with regard to the configuration of acceptable gear for use in each fishery, as well as how to deal with impacts on fishery resources and other users due to gear selectivity and fishing. It would be extremely difficult to circumvent these regulations, and even if such a situation occurred, the regulatory and management system would be able to effectively respond. Salmon fisheries in Alaska are managed in accordance with the state constitution, which states that, except for limited entry, there will be no exclusive right or special privilege of fishery. Therefore, regulations promulgated by the BOF apply equally to all users of the resource in the state. The setting of regulations as well as in season management are public processes in which new developments and requirements are made available to all fishers as well as the general public.		
Current status/Appropriateness/Effectiveness:		
<i>The adopted methods are successful and effective and fishing regulations are made known to the participants. Enforcement data are highlighting significant violations.</i>		☒
EVIDENCE:		
Fishing regulations in Alaska are adopted through the Board of Fish. This is an open public process where all proposals, deliberations and regulatory actions are recoded and made available on ADFG's web site ¹⁶⁹ . Subsequent to adoption of new regulations ADFG makes updated copies of all relevant statutes and regulations available on their website ¹⁷⁰ .		
Fishing regulations in Alaska have a long history of development and evolution to adapt to changing biological, social and economic conditions. These regulations are reviewed every three years. The fact that new proposals are submitted for consideration at each meeting illustrates that they are not considered "perfect" by all participants. However, it is clear that the regulations have been successful in the development sustainable fisheries while taking into consideration the vast diversity of social, cultural and economic values of the participants.		
Enforcement efforts in Alaska have demonstrated substantial flexibility to respond to changing circumstances. For instance, concern was raised by Western Alaska residents that the Chum Salmon catch in the Area M fishery on the Alaska Peninsula were under reporting. In response the Alaska State Troopers mounted significant efforts to monitor where or not all Chum Salmon being caught were in fact landed and recorded on fish tickets. This effort led to highlighting significant violations.		
Evidence Basis:		
<i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the intent of fishing selectivity and fishing impacts-related regulations is not circumvented by technical devices. Information on new developments and requirements is made available to all fishers. Examples may include various data and reports.</i>		☒
EVIDENCE:		

¹⁶⁹ <https://www.adfg.alaska.gov/index.cfm?adfg=fisheriesboard.meetinginfo>

¹⁷⁰ <https://www.adfg.alaska.gov/index.cfm?adfg=fishregulations.Commercial>

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

The Alaska Department of Public Safety¹⁷¹ reported that “Overall compliance still remains about the same as the previous season, we did not see much deviation in the levels of compliance”. They reported 6838 contacts with fishermen in the 2024 season. These contacts resulted in 296 warnings being issued and 343 citations being issued.

There is no significant evidence in either the record of fishing violations or in Board of testimony to indicate that the intent of fishing selectivity and fishing impacts-related regulations is being circumvented by technical devices.

References:					
Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	x 3
	10			0	
		=			Overall score
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)					High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)					Full Conformance
Non-conformance Number (if applicable):					

¹⁷¹

1 DeGraaf, Derek J AK Dept. of Public Safety email April 7, 2025

9.4.1.14 Supporting Clause 8.10.

8.10	Assessment and scientific evaluation shall be carried out on the impacts of habitat disturbance on the fisheries and ecosystems prior to the commercial-scale introduction of new fishing gear, methods, and operations. Accordingly, the impacts of such introductions shall be monitored.		
Relevance:	Not relevant.		
	This clause is not applicable because new gear has not been introduced in the past 3 years.		
Evaluation Parameters			Met?
Process: <i>New gear has been recently introduced on a commercial scale within the last 3 years, or there is a plan to introduce new gear in the foreseeable future.</i>			☐
EVIDENCE:			
Current status/Appropriateness/Effectiveness: <i>An appropriate assessment of potential impacts has been carried out. There is evidence to suggest that the assessment is adequate to support habitat conservation and fishery management purposes. Additionally, there is a monitoring regime in place.</i>			☐
EVIDENCE:			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that assessment and scientific evaluation is carried out on the implications of habitat disturbance impact on the fisheries and ecosystems prior to the commercial-scale introduction of new fishing gear, methods, and operations. Accordingly, the effects of such introductions are monitored. Examples may include various regulations, data, and reports.</i>			☐
EVIDENCE:			
References:			
Numerical score:	Starting score 10	– (Number of EPs <u>NOT</u> met x 3) =	Overall score
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			NR
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			
Non-conformance Number (if applicable):			

9.4.1.15 Supporting Clause 8.11.

8.11.	International cooperation shall be encouraged for research programs involving fishing gear selectivity, fishing methods and strategies, dissemination of the results of such research programs, and the transfer of technology.					
Relevance:	Relevant.					
Evaluation Parameters						
Process: <i>There is a system of international information exchange to allow knowledge to be shared.</i>			Met? ☒			
EVIDENCE: There are two international organizations that Alaska participates in that encouraged research involving fishing gear selectivity, fishing methods and strategies, the dissemination of the results of such research programs, and the transfer of technology. The North Pacific Anadromous Fish Commission (NPAFC) is a venue for coordinating the collection, exchange, and analysis of scientific data regarding these Pacific salmon. The NPAFC includes representatives from The U.S., Canada, Japan, Russia and South Korea. The second venue is the Pacific Salmon Commission (PSC). The PSC includes representatives from Canada and the U.S. The area of cooperation in the PSC includes shared coastwide stocks of Chinook Salmon and salmon stocks of the Transboundary Rivers (e.g. Yukon, Taku, Alsek, Stikine).						
Current status/Appropriateness/Effectiveness: <i>There is evidence for international information exchange, such as meeting records or other information.</i>			☒			
EVIDENCE: The annual reports of the NPAFC (NPAFC 2022) and PSC (2025) provide a summary of the annual activities.						
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that international cooperation is encouraged for research programs involving fishing gear selectivity, fishing methods and strategies, dissemination of the results of such research programs, and the transfer of technology. Examples may include various data and reports.</i>			☒			
EVIDENCE: Besides the annual reports mentioned above there is a substantial library of technical documents maintained by the NPAFC ¹⁷² and PSC ¹⁷³ .						
References:	NPAFC. 2022. Annual Report of the North Pacific Anadromous Fish Commission. https://www.npafc.org/wp-content/uploads/Public-Documents/2022/AR2022.pdf PSC. 2025. Thirty-Ninth Annual Report 2023/24 Pacific Salmon Commission. 600-1155 Robson Street Vancouver, B.C. Canada. https://www.psc.org/wp-admin/admin-ajax.php?juwpfisadmin=false&action=wpfd&task=file.download&wpfd_category_id=31&wpfd_file_id=18915&token=&preview=1					
Numerical score:	Starting score	– (	Number of EPs <u>NOT</u> met	x 3	) =	Overall score
	10					10

¹⁷² <https://www.npafc.org/publications/>

¹⁷³ <https://www.psc.org/publications/>

8.11.	International cooperation shall be encouraged for research programs involving fishing gear selectivity, fishing methods and strategies, dissemination of the results of such research programs, and the transfer of technology.
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)	High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)	Full Conformance
Non-conformance Number (if applicable):	

9.4.1.16 Supporting Clause 8.12.

8.12	The fishery management organization and relevant institutions involved in the fishery shall collaborate in developing standard methodologies for research into fishing gear selectivity, fishing methods and strategies, and on the behavior of target and non-target species regarding such fishing gear—as an aid for management decisions and with a view to minimizing non-utilized catches.
Relevance:	Relevant.
Evaluation Parameters	
Process:	
<i>There is collaborative research into fishing gear selectivity, fishing methods, and strategies.</i>	
Met?	
☒	
EVIDENCE:	
All available data indicates that the incidental catch of non-utilized species is very low in the commercial salmon fisheries. This is due to the selective nature of the fishing gear (and the detailed description of the gear that may be used) and the times and places where fishing is permitted that focuses on high concentrations of salmon.	
Historically a significant effort has been put into understanding the selectivity of gillnets to differentially harvest one species while avoiding another species. In recent years there has been renewed effort to selectively harvest Chum Salmon while avoiding Chinook Salmon in the Yukon using fish wheels and to selectively harvest Sockeye Salmon while avoiding Chinook Salmon in the Upper Cook Inlet. In addition, ADFG has issued experimental gear permits to harvest Sockeye Salmon while avoiding/releasing Chinook Salmon. The characteristics of these gear types are fairly well known and do not require extensive research. The most important issue with the use of these gear has been to better understand the survival of released fish.	
ADFG has worked with NOAA fisheries and Canada through the Pacific Salmon Treaty Commission to obtain estimates of the mortality of Chinook caught and released.	
Current status/Appropriateness/Effectiveness:	
<i>There is evidence of such research, and the results have been applied accordingly in fisheries management.</i>	
☒	
EVIDENCE:	
In the Pacific Salmon Treaty process estimates of Chinook Salmon mortality from multiple sources has been used to establish total mortality quotas (PSC-JTCC 2023).	
Evidence Basis:	
<i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization and relevant institutions involved in the fishery collaborate in developing standard methodologies for research into fishing gear selectivity, fishing methods and strategies, and on the behaviour of target and non-target species in relation to such fishing gear—as an aid for management decisions and with a view to minimizing non-utilized catches. Examples may include various data and reports.</i>	
☒	
EVIDENCE:	
There has been a limited need to collaborate in developing standard methodologies for research into fishing gear selectivity, fishing methods and strategies, and on the behaviour of target and non-target species in relation to such fishing gear—as an aid for management decisions and with a view to minimizing non-utilized catches. However, when such a need has arisen there has been research into this issue.	
References:	
PSC-JTCC. 2023. Annual report of catch and escapement for 202. TCCHINOOK (23)-02 Pacific Salmon Commission., Vancouver, B.C. Canada. https://www.psc.org/publications/technicalreports/technical-committee-reports/chinook/	

8.12	The fishery management organization and relevant institutions involved in the fishery shall collaborate in developing standard methodologies for research into fishing gear selectivity, fishing methods and strategies, and on the behavior of target and non-target species regarding such fishing gear—as an aid for management decisions and with a view to minimizing non-utilized catches.														
Numerical score:	Starting score		–		(		Number of EPs <u>NOT</u> met		x 3		)		=	Overall score	
	10						0							10	
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)														High	
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)														Full Conformance	
Non-conformance Number (if applicable):															

9.4.1.17 Supporting Clause 8.13.

8.13	Where appropriate, policies shall be developed for increasing stock populations and enhancing fishing opportunities through the use of artificial structures. The fishery management organization shall ensure that, when selecting the materials to be used in the creation of artificial reefs, as well as when selecting the geographical location of such artificial reefs, the provisions of relevant international conventions concerning the environment and the safety of navigation are observed.		
Relevance:	Not relevant. . This Clause is not relevant because there are no artificial structures used in Alaska.		
Evaluation Parameters			Met?
Process: <i>There is a mechanism in place for identifying potential for increasing stock populations and enhancing fishing opportunities through the use of artificial structures. This mechanism ensures that where artificial structures are deemed appropriate, environmental protection, safety, and navigation are considered in their application.</i>			☐
EVIDENCE:			
Current status/Appropriateness/Effectiveness: <i>This mechanism has been applied to the stocks under consideration, resulting in the conclusion to either use artificial structures, or that artificial structures are inappropriate. Care has been taken in the selection of materials to use in constructing artificial reefs, the selection of sites for their deployment, and to ensure that relevant conventions concerning the environment and the safety of navigation have been observed.</i>			☐
EVIDENCE:			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that where appropriate, policies are developed for increasing stock populations and enhancing fishing opportunities through the use of artificial structures. The fishery management organization shall also ensure that, when selecting the materials to be used in the creation of artificial reefs, as well as when selecting the geographical location of such artificial reefs, the provisions of relevant international conventions concerning the environment and the safety of navigation are observed. Examples may include various laws, data and reports.</i>			☐
EVIDENCE:			
References:			
Numerical score:	Starting score	Number of EPs <u>NOT</u> met	Overall score
	10	$\left(\quad \times 3 \right)$	
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			N/A
Non-conformance Number (if applicable):			

9.4.2 Fundamental Clause 9. Appropriate standards of fishers' competence

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

9.4.2.1 Supporting Clause 9.1.

9.1.	States shall advance, through education and training programs, the education and skills of fishers and, where appropriate, their professional qualifications. Such programs shall take into account agreed international standards and guidelines.
Relevance:	Relevant
Evaluation Parameters	
Process:	
There are implemented education programs for fishers (e.g., health and safety, fisheries management framework, rule and regulation, etc.).	
	Met? ☒
EVIDENCE:	
There are several avenues for fishermen to receive training to ensure they have appropriate standards of competence.	
Alaska Marine Safety Education Association (AMSEA) Marine Safety Training Program	
The Alaska Marine Safety Education Association (AMSEA) provides marine safety training for commercial fishermen ¹⁷⁴ , subsistence & recreational boaters, and youth & women boaters throughout Alaska and across the United States. AMSEA's Fishing Vessel Drill Conductor Trainings are accepted by the U.S. Coast Guard and meet the training requirements for fishermen onboard commercial fishing vessels	
Alaska Longline Fishermen's Association (ALFA) Crew Training Program	
Established in 2015 as a component of ALFA's Young Fishermen Initiative ¹⁷⁵ , the program seeks to: 1) offer young individuals aspiring to a career in commercial fishing the chance to acquire practical experience; and 2) enhance their comprehension of commercial fishing, its associated lifestyle, and its vital contribution to coastal communities. Simultaneously offering a secure, well-directed, introductory experience. The Crew Training Program assists skippers in selecting, preparing, and securely integrating beginner crew members into commercial fishing, while also offering resources to young individuals to assure their readiness for their first professional fishing experience.	
Alaska Maritime Training Center	
The State of Alaska, Department of Labor and Workforce Development (ADLWD) includes the Alaska's Institute of Technology, also called Alaska Vocational Training & Education Center (AVTEC). One of AVTEC's main divisions is the Alaska Maritime Training Center ¹⁷⁶ . The Alaska Maritime Training Center is a United States Coast Guard approved training facility located in Seward, Alaska, and offers USCG/STCW (STCW is the international Standards of Training, Certification, and Watchkeeping) compliant maritime training. In addition to the standard courses offered, customized training is available to meet the specific needs of maritime companies. Courses are delivered through the use of world class ship simulator, state of the art computer based navigational laboratory and modern classrooms equipped with the latest instructional delivery technologies. AVTEC offers courses such as Able	

¹⁷⁴ <https://www.amsea.org/commercial-fishermen>

¹⁷⁵ <https://www.alfafish.org/crewtraining>

¹⁷⁶ <https://avtec.edu/maritime/>

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

Seaman, Fire Fighting, Meteorology, Electronic Chart display and Information Systems, Seafood Processor Orientation and Safety Course, among many others

University of Alaska Sea Grant Marine Advisory Program

The Marine Advisory Program (MAP) is a university-based statewide program designed to help Alaskans with the practical use and conservation of the state's marine and freshwater resources MAP is based at the University of Alaska Fairbanks (UAF) College of Fisheries and Ocean Sciences¹⁷⁷. Through classes, workshops, trainings and other resources, MAP offers Alaskans technical assistance, marine education, applied research and other expert advice on how residents can sustain healthy coastal economies, communities, and ecosystems

Alaska Young Fishermen's Summit

Established in 2007 by the Alaska Sea Grant Marine Advisory Program, the Alaska Young Fishermen's Summit (AYFS)¹⁷⁸ is a three-day networking and skill-building conference for new entrants in managing modern commercial fishing businesses designed to provide training, information, and networking opportunities for commercial fishermen early in their careers. The event features prominent industry leaders as speakers and mentors

UAS Maritime Training Center

UAS Maritime Training Center at Ketchikan¹⁷⁹ provides several educational opportunities for students to follow career paths such as:

- Able Seaman (Seafarer)
- Entry Level Deckhand
- Charter Boat Skipper
- 100–200 Ton Vessel Captain
- Towing Vessel Officer
- QMED Oiler

Washington Sea Grant the Purse Seine Vessel Crew Member Training Program.

The "Crew School" Purse Seine Vessel Crew Member Training Program¹⁸⁰, provided by the Gig Harbor BoatShop in partnership with Washington Sea Grant, delivers essential training for commercial fishing crew members, encompassing practical experience on vessels, and aims to assist both prospective crew members and commercial fishing skippers.

The "Crew School" is a four-day program aimed at delivering essential training for commercial fishing crew members, encompassing both classroom instruction and practical experience on commercial fishing vessels, particularly purse seiners. The program targets persons aspiring to work on commercial fishing vessels, specifically purse seiners, as well as commercial fishing skippers seeking qualified crew members. The program covers basic skills required aboard fishing vessels, including hands-on training and a glimpse into the onboard life of a commercial fishing crew member

Alaska Onboard Crewmember Training – Kodiak

The AK On-Board program¹⁸¹ offers a variety of regional, practical training opportunities for beginner commercial fishers. The initiative is spearheaded by Alaska Sea Grant, Alaska Marine Safety Education Association, Alaska Longline Fishermen's Association,

¹⁷⁷ <https://alaskaseagrant.org/marine-advisory/>

¹⁷⁸ <https://alaskaseagrant.org/events/alaska-young-fishermens-summit/>

¹⁷⁹ https://uas.alaska.edu/career_ed/maritime/index.html

¹⁸⁰ <https://www.gigharborboatshop.org/crewschool-25>

¹⁸¹ <https://alaskaseagrant.org/event/crewmember-training-kodiak-2025/>

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

Alaska Marine Conservation Council, and regional collaborators to assist new crew members in acquiring fundamental skills, understanding marine safety, networking with potential employers, and connecting with industry peers.

Training and activities encompass:

- Introduction to Alaska fisheries
- Knot tying
- Life on the water
- Boat handling and navigation
- Beginning mechanics
- Crew contracts
- Gear repair
- Seafood handling
- AMSEA Drill conductor training
- Tours of working fishing vessels

Kodiak College Maritime Workforce Development Program (MWDP)

The Maritime Workforce Development Program (MWDP)¹⁸² offer short, focused workshops on critical skills for vessel repair and maintenance, deck handing, and net construction/repair.

NPFMC, NMFS and ADFG websites

All regulations governing salmon are available on the NPFMC¹⁸³, NMFS¹⁸⁴ and ADFG¹⁸⁵ websites. Changes to regulations are considered only after detailed processes which include open and public discussions, and the results of any changes are widely communicated. Fishermen do attend these meetings and participate in these processes where they input in and become better acquainted with fishery regulations.

Current status/Appropriateness/Effectiveness:

These programs are effective in training fishers, in line with international standards and guidelines.



EVIDENCE:

The State of Alaska's Department of Labor & Workforce Development (ADLWD) oversees AVTEC—formerly known as the Alaska Vocational Training & Education Centre and now recognized as Alaska's Institute of Technology. One of its key subdivisions is the Alaska Maritime Training Center, which is dedicated to promoting safe maritime operations by preparing captains and crew for work in Alaska's maritime industry¹⁸⁶. This US Coast Guard–approved training facility in Seward provides maritime courses that comply with USCG and international STCW standards (the Standards of Training, Certification, and Watchkeeping)¹⁸⁷. In addition to its core course offerings, the center delivers tailored training to meet the specific requirements of maritime companies through its world-class ship simulator, state-of-the-art computer-based navigational laboratory, and modern classrooms equipped with advanced instructional technologies. Its mission is to equip Alaskans with the technical expertise and practical skills needed to thrive in an ever-evolving maritime industry, and it further extends its reach by partnering with the Maritime Learning System to offer online training for entry-level USCG licenses, endorsements, and renewals.

The Centre's course offerings include Video Tutorials such as:

¹⁸² <https://koc.alaska.edu/programs/continuing-education/Maritime/>

¹⁸³ <https://www.npfmc.org/fisheries-issues/fisheries/salmon-fisheries/>

¹⁸⁴ https://www.fisheries.noaa.gov/rules-and-announcements/notices-and-rules?title=&management_area%5BAlaska%5D=Alaska&field_species_vocab_target_id=&sort_by=field_relevant_date_value

¹⁸⁵ <https://www.adfg.alaska.gov/index.cfm?adfg=fishingCommercial.main>

¹⁸⁶ <http://www.avtec.edu/AMTC.htm>

¹⁸⁷ <http://www.stcw.org/>

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

1. How to get your Merchant Mariner's Credential
2. Which Course Do You Need? U.S. Coast Guard Approved/STCW-Compliant Courses
3. Able Seaman
4. Assistance Towing Operations
5. Automatic Radar Plotting Aids (ARPA) Operations
6. Basic Safety Training -
7. First Aid & CPR
8. Personal Safety and Social Responsibility
9. Basic Fire Fighting
10. Personal Survival Techniques
11. Bridge Resource Management (BRM)
12. Global Maritime Distress & Safety System (GMDSS)
13. Master Not More Than 200 Tons Program
14. Meteorology
15. Operator of Uninspected Passenger Vessels (OUPV)
16. Proficiency in Survival Craft
17. Qualified Member of Engine Department (QMED) Oiler
18. Radar Observer (Unlimited), Original
19. Radar Observer (Unlimited), Refresher
20. Radar Observer (Unlimited), Recertification
21. Rating Forming Part of a Navigational Watch
22. Seafood Processor Orientation and Safety Course
23. Shipboard Emergency Medicine
24. Tankship – Dangerous Liquids (P.I.C.)
25. Visual Communications/Flashing Lights
26. Medical Care Provider
27. FCC Marine Radio Operators Permit Examination

In parallel, the University of Alaska Sea Grant Marine Advisory Program (MAP)¹⁸⁸ expands educational opportunities by providing specialized training in diverse areas such as improved process control, HACCP systems, sanitation procedures, marine refrigeration technology, net mending, icing and handling, direct marketing, financial management for fishermen, and fuel efficiency optimization. MAP also organizes the Alaska Young Fishermen's Summit—a rigorous three-day course covering everything from fisheries management and regulatory frameworks to seafood marketing—designed specifically for young coastal Alaskans. Additional educational support is provided by the Fishery Industrial Technology Centre in Kodiak and by the Alaska Marine Safety Education Association (AMSEA) in Sitka, which serves as a dedicated forum for disseminating safety, health, and environmental information.

Alaska's fisheries management benefits from an open and accessible process that includes regular BOF meetings and public Advisory Committee sessions, where fishers and stakeholders alike engage in discussions and gain up-to-date insights into regional fishery issues. Moreover, the Alaska Seafood Marketing Institute (ASMI)¹⁸⁹ provides comprehensive educational materials—including guidance on the FAO Code—covering topics such as quality control, hygiene, food safety, sustainability, and environmental protection. Evidence confirming that FAO CCRF provisions are communicated to all engaged in fishing operations is available on the ASMI website¹⁹⁰, which details the CSI program and conformance criteria alongside the relevant FAO documents. In addition, the

¹⁸⁸ <http://seagrant.uaf.edu/map/>

¹⁸⁹ <https://www.alaskaseafood.org/sustainability/fisheries-management/>

¹⁹⁰ <https://www.alaskaseafood.org/sustainability/certification/>

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

Alaska Department of Fish and Game (ADFG) publishes a wide array of documents^{191, 192}—from regulations and informational booklets to news stories—that reinforce the state’s adherence to Alaska Statutes and the intent of the FAO Code, thereby supporting a high level of confidence in the educational and training framework.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that States enhance, through education and training programs, the education and skills of fishers and, where appropriate, their professional qualifications. Such programs take into account agreed international standards and guidelines. Examples may include various data, websites.



There is sufficient and credible evidence supporting the effectiveness of these programs. Documentation from the Alaska Department of Fish and Game (ADF&G), training records, and third-party assessments confirm that the programs meet international guidelines and enhance the professional qualifications of fishers.

References:

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)									High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)									Full Conformance
Non-conformance Number (if applicable):									

¹⁹¹ <http://www.adfg.alaska.gov/index.cfm?adfg=librarypublications.main>

¹⁹² <http://www.adfg.alaska.gov/index.cfm?adfg=animals.listfish>

9.4.2.2 Supporting Clause 9.2.

9.2.	States, with the assistance of relevant international organizations, shall endeavor to ensure, through education and training, that all those engaged in fishing operations be given information on the most important provisions of the FAO CCRF (1995), as well as provisions of relevant international conventions and applicable environmental and other standards that are essential to ensure responsible fishing operations.
Relevance:	Relevant
Evaluation Parameters	
Process: <i>There are relevant measures of the FAO CCRF and other applicable environmental and other standards being exposed to fishers for their training.</i>	☒
EVIDENCE: Although there are no specific international organizations directly involved, in addition to the evidence presented in clause 9.1—which aligns with the intent of the FAO CCRF—the University of Alaska Sea Grant Marine Advisory Program (MAP) plays a pivotal role by delivering education and training across multiple sectors, including fisheries management, primarily through seminars and workshops. Furthermore, at both Federal and State levels, open and accessible management forums—such as BOF meetings—serve as valuable platforms where fishers regularly participate and enhance their understanding of fisheries operations. Given that Alaska’s fishery statutes are designed in accordance with the FAO CCRF, these meetings also function as informal learning opportunities regarding the international standards. Since 2024, MAP has broadened its outreach by incorporating advanced digital tools and remote learning modules that complement traditional face-to-face sessions, while BOF processes have been modernized with real-time data and interactive feedback channels—further reinforcing compliance and ensuring that fishers are continually updated on current environmental and regulatory standards.	
Current status/Appropriateness/Effectiveness: <i>These programs are effective in training fishers, in line with international standards, guidelines, and key CCRF principles. The presence of general training programs for fishermen (e.g., health and safety, fisheries management framework, rule and regulation, etc.) shall be evidence that the key principles of the CCRF have been filtered down from management to fishermen. Furthermore, the existence of laws and regulation with which fishermen are compliant demonstrate further compliance to this clause.</i>	☒
EVIDENCE: Additional evidence referenced in clause 9.1—which aligns with the intent of the FAO Code of Conduct for Responsible Fisheries (CCRF)—is provided by the University of Alaska Sea Grant Marine Advisory Program (MAP). MAP delivers education and training across various sectors, including fisheries management, through a range of seminars and workshops that cater to all levels—from academic and introductory courses to more advanced technical training. Moreover, MAP organizes the Alaska Young Fishermen’s Summit, an intensive three-day workshop covering all aspects of Alaska fisheries. This summit touches on topics from fisheries management and regulation (e.g., the MSFCMA) to seafood markets and marketing, and is specifically targeted at young Alaskans from coastal communities. Although the content of these courses might not always reference FAO terminology explicitly, the design and delivery of these workshops, scientific symposiums, and hands-on field training programs clearly embody the principles and the intent of the FAO Code ¹⁹³. Alaska’s fisheries are also highly compliant with the Code, as is evident through a multitude of certifications and the wide dissemination of these standards across all fisheries, including those for Alaska salmon. Additionally, management processes such as the BOF meeting cycle offer an open and accessible forum where fishers engage regularly in discussions about regional fishery issues, thereby receiving informal education on current regulatory topics. Regional Advisory Committees, which consist of local stakeholders, hold public meetings that further reinforce this educational process. The Alaska Seafood Marketing Institute (ASMI) also contributes by providing educational materials on the FAO Code as it relates to numerous aspects of fisheries—spanning quality,	

¹⁹³ <https://alaskaseagrant.org/events/alaska-young-fishermens-summit/>

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

hygiene, food safety, sustainability, and environmental protection¹⁹⁴. Detailed descriptions of the CSI program, its conformance criteria, and associated FAO documents are available on the ASMI website, clearly evidencing that FAO CCRF provisions are communicated to all parties involved in fishing operations¹⁹⁵.

Since 2024, MAP has expanded its training portfolio by incorporating enhanced remote online modules, interactive webinars, and integrated multimedia content. Likewise, BOF meetings now utilize advanced digital conferencing platforms to widen participation and ensure critical information is disseminated swiftly and broadly. ASMI has similarly updated its offerings by integrating interactive e-learning resources that provide real-time access to guidance based on FAO CCRF principles. Meanwhile, ADFG continues to publish a wide range of documents, booklets, and pamphlets—covering everything from regulatory updates to educational articles and news stories—that were reviewed during on-site visits, thereby consolidating both formal and informal educational efforts in line with the FAO Code¹⁹⁶.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that States, with the assistance of relevant international organizations, endeavor to ensure, through education and training, that all those engaged in fishing operations be given information on the most important provisions of the FAO CCRF, as well as provisions of relevant international conventions and applicable environmental and other standards that are essential to ensure responsible fishing operations. Examples may include various data, websites.



EVIDENCE:

the documentation for this reassessment report shows that comprehensive training is provided through seminars, workshops, and on-the-job sessions that cover not only the FAO CCRF but also key aspects of other international conventions and environmental standards necessary for responsible fishing operations. Additional evidence comes from the University of Alaska Sea Grant Marine Advisory Program (MAP), which presents training across various levels and sectors, and from open management forums such as BOF meetings, where the regulatory principles are communicated in an accessible way. Together, these forms of evidence—ranging from digital records to industry websites like those of the Alaska Seafood Marketing Institute (ASMI) and FAO—confirm that the education provided meets international benchmarks and effectively promotes responsible fisheries management.

References:

	Starting score		Number of EPs NOT met			Overall score
Numerical score:	10	– (	0	x 3	) =	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)	High					
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)	Full Conformance					
Non-conformance Number (if applicable):						

¹⁹⁴ <http://www.alaskaseafood.org/about/>

¹⁹⁵ <http://www.alaskaseafood.org/rfm-certification/fisheries-standard/>

¹⁹⁶ <http://www.adfg.alaska.gov/index.cfm?adfg=librarypublications.main>

9.4.2.3 Supporting Clause 9.3.

9.3.	The fishery management organization shall, as appropriate, maintain records of fishers which shall, whenever possible, contain information on their service and qualifications, including certificates of competency, in accordance with their State's laws.	
Relevance:	Relevant	
Evaluation Parameters		Met?
Process: <i>There is a system to collect and maintain fisher records.</i> <i>Current Status/Appropriateness/Effectiveness:</i> <i>Evidence Basis:</i>		☒
EVIDENCE: Fisher registration and licensing data in Alaska are managed across multiple agencies, including the Alaska Department of Fish and Game (ADFG), the Commercial Fisheries Entry Commission (CFEC), and the Alaska Fisheries Information Network (AKFIN). Each agency plays a distinct role in collecting, verifying, and managing data depending on the type of license or permit involved. Since 2021, there have been several improvements: AKFIN has enhanced its centralized data system, integrating information from state and federal sources into a standardized, accessible format. This supports more efficient analysis and reporting for fisheries managers and researchers ¹⁹⁷ . CFEC has modernized its digital services, allowing for online permit renewals and streamlined access to licensing records, improving transparency and user access ¹⁹⁸ . ADFG continues to require applicants to submit detailed personal and operational information to meet eligibility and residency requirements for various permits ¹⁹⁹ . These updates ensure that data on fishers is not only comprehensive and current but also more accessible for compliance monitoring, research, and policy development.		
Current status/Appropriateness/Effectiveness: <i>These records are considered accurate and effective for management purposes.</i>		☒
EVIDENCE: Professionalism in Alaska's commercial fisheries is typically developed through hands-on experience, with most individuals beginning as deckhands and gradually advancing to more senior roles. Entry into the fishery is regulated through a fishery-specific licensing system, which requires applicants to meet defined eligibility and residency criteria. Since 2021, several agencies have continued to maintain and enhance databases that track commercial permit holders, vessels, and fishery participation: The Commercial Fisheries Entry Commission (CFEC) and the Alaska Department of Fish and Game (ADFG) manage licensing and permit data, including residency qualifications and vessel registrations. Much of this information is now accessible online and is published annually in statistical reports ²⁰⁰ . The Alaska Fisheries Information Network (AKFIN) integrates state and federal data into a centralized system to support fisheries management and research. ²⁰¹		

197 <https://akfin.psmfc.org/>

198 <https://www.cfec.state.ak.us/>

¹⁹⁹ <https://www.adfg.alaska.gov/index.cfm?adfg=license.residencyqualifications>

200 <https://www.adfg.alaska.gov/index.cfm?adfg=fishlicense.holders>

201 <https://akfin.psmfc.org/>

9.3. The fishery management organization shall, as appropriate, maintain records of fishers which shall, whenever possible, contain information on their service and qualifications, including certificates of competency, in accordance with their State's laws.

The Alaska Department of Commerce, Community, and Economic Development continues to offer low-interest loans to commercial fishers for purchasing vessels and permits, supporting economic access and sustainability in the industry ²⁰². These systems ensure that data on commercial fishing activity is transparent, standardized, and available to both regulators and the public.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization maintains, as appropriate, records of fishers which, whenever possible, contain information on their service and qualifications, including certificates of competency, in accordance with their national laws. Examples may include various data or reports.



EVIDENCE:

Alaska's fishery management agencies maintain comprehensive and accessible records of fishers, including service history and qualifications, in accordance with state and federal regulations. These systems support transparency, regulatory compliance, and effective fisheries management.

Supporting Evidence:

Alaska Department of Fish and Game (ADFG):

Maintains detailed records of commercial fishers, including license types, residency status, and operational roles.

- Requires submission of personal and operational data during permit applications, which helps verify eligibility and track service history.
- Provides public access to permit and harvest data through:
- ADF&G License Portal
- Permit Search Tool
- Online Harvest Reporting

Commercial Fisheries Entry Commission (CFEC):

- Maintains a centralized database of limited entry and interim-use permit holders.
- Tracks vessel ownership, permit transfers, and residency qualifications.
- Offers online access to permit histories and licensing records.

Alaska Fisheries Information Network (AKFIN):

- Integrates state and federal data into a standardized format for analysis and reporting.
- Supports fisheries managers and researchers in evaluating fisher participation and compliance trends.

Since 2021, CFEC and ADFG have expanded digital services, including online permit renewals and downloadable forms and AKFIN has enhanced its data integration capabilities, improving accessibility and analytical utility.

These systems collectively ensure that records of fishers are accurate, up-to-date, and aligned with national legal requirements.

References:

Numerical score:		Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
		10			0					10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)										High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)										Full Conformance
Non-conformance Number (if applicable):										

²⁰² <https://www.commerce.alaska.gov/web/inv/LoanPrograms/CommercialFishingLoanProgram.aspx>

9.4.3 Fundamental Clause 10. Effective legal and administrative framework

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.

9.4.3.1 Supporting Clause 10.1.

10.1.	Effective mechanisms shall be established for fisheries monitoring, surveillance, control, and enforcement measures including, where appropriate, observer programs, inspection schemes, and vessel monitoring systems, to ensure compliance with the conservation and management measures for the fishery in question. This could include relevant traditional, fisher, or community approaches, provided their performance could be objectively verified.
Relevance:	Relevant
Evaluation Parameters	
Process: <i>There are clear mechanisms established for fisheries monitoring, surveillance, control, and enforcement.</i>	
Met? ☒	
EVIDENCE: The U.S. Coast Guard (USCG) ²⁰³ and the Alaska Wildlife Troopers (AWT) ²⁰⁴ continue to collaborate closely on enforcing both state and federal laws in Alaska's salmon fisheries. Their joint efforts span from nearshore waters to offshore zones, ensuring sustainable harvests and legal compliance across one of the world's most valuable salmon fisheries. The USCG plays a key role ²⁰⁵ in: ▪ Maritime safety enforcement ▪ Monitoring vessel compliance with federal permits, licenses, and safety standards ▪ Supporting search and rescue operations during peak salmon seasons ▪ Assisting with enforcement of federal conservation laws, including those protecting migratory fish like salmon The AWT, under the Alaska Department of Public Safety, leads enforcement of state salmon fishing regulations. Their responsibilities include ²⁰⁶: ▪ At-sea patrols using a fleet of 17 vessels ranging from 25 to 156 feet, covering areas from Ketchikan to the Bering Sea 1 ▪ Monitoring gear use, including net types and placement ▪ Checking for legal fishing times, areas, and quotas ▪ Inspecting vessels for proper licensing and reporting ▪ Seizing illegally caught salmon, which are often donated to local charities 2 During peak salmon runs—such as the six-week red salmon fishery in Bristol Bay, which involves over 1,900 vessels and 1,000 net sites—AWT and USCG conduct round-the-clock patrols. These include undercover operations, aerial surveillance, and dockside inspections to ensure compliance ^{207, 208}. Since 2021, enforcement has intensified in response to increased fishing pressure and environmental concerns. AWT has expanded its use of unmarked patrols, stakeouts, and public safety technicians to monitor high-traffic areas like Ship Creek and the rivers near Talkeetna ²⁰⁹. These efforts have resulted in hundreds of citations and warnings for violations such as fishing in closed waters or lacking proper licenses.	

²⁰³ <https://cgmix.uscg.mil/>

²⁰⁴ <https://dps.alaska.gov/AWT/Home>

²⁰⁵ <https://www.news.uscg.mil/Press-Releases/Article/3357611/preserving-alaskas-living-marine-resources/>

²⁰⁶ <https://dps.alaska.gov/AWT/Marine/Home>

²⁰⁷ <https://cgmix.uscg.mil/>

²⁰⁸ <https://dps.alaska.gov/AWT/Marine/Home>

²⁰⁹ <https://dailydispatch.dps.alaska.gov/Home/Display?dateReceived=7/26/2024%2012:00:00%20AM>

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

Current status/Appropriateness/Effectiveness:

These mechanisms are effective, and include effective observer programs, inspection schemes, and vessel monitoring systems where appropriate for the type of fishery under assessment. Monitoring, surveillance, control, and enforcement mechanisms can be considered effective if they are sufficiently broad to cover the entirety of the unit of certification, there is evidence that rules and regulations are consistently enforced, and there is no evidence of frequent or widespread violation of fishery regulations. This could include relevant traditional, fisher, or community approaches, provided their performance could be objectively verified. With respect to fisheries on the high seas, the legal obligations of UNCLOS and UNFSA have particular relevance. Evidence of the performance of the legal framework can be derived from assessing conformance with requirements covering compliance and enforcement. Specifically, the assessment team shall document the general level/type of fisheries controls (e.g., number of boarding's, reprimands) and the respective level of fisheries violations (e.g., %) on a yearly basis.


EVIDENCE:

The U.S. Coast Guard (USCG) ²¹⁰ and the Alaska Wildlife Troopers (AWT) ²¹¹ maintain a coordinated enforcement strategy focused on at-sea and dockside compliance in Alaska's salmon fisheries. This joint effort ensures that both state and federal laws are upheld under shared jurisdiction, with agents from both agencies actively patrolling and inspecting vessels.

The USCG is primarily responsible for enforcing federal maritime regulations, including:

- Safety at sea
- Drug interdiction
- Compliance with the Endangered Species Act (ESA) and Essential Fish Habitat (EFH) protections
- Verification of federal permits, licenses, and vessel monitoring systems (VMS)

In the context of salmon fisheries, the USCG also plays a key role in monitoring vessel activity in the U.S. Exclusive Economic Zone (EEZ) to ensure that no foreign fleets engage in illegal fishing. Since 2021, the USCG has increased its focus on illegal, unreported, and unregulated (IUU) fishing, particularly in the North Pacific.

The AWT, operating under the Alaska Department of Public Safety, enforces state salmon fishing laws. Their vessels are equipped to:

- Inspect gear (e.g., gillnets, seines) for legal configuration and deployment
- Board vessels at sea to check for compliance with seasonal openings, area restrictions, and harvest limits
- Verify that vessels carry all required state and federal licenses

AWT also works closely with Alaska Department of Fish and Game (ADFG) biologists and technicians to conduct dockside inspections, including:

- Hold inspections
- Monitoring offloads to ensure accurate reporting and legal harvest
- Sampling catches for biological data and quota tracking

Since the rationalization of many fisheries in Alaska, including the implementation of Individual Fishing Quotas (IFQs) and Individual Processor Quotas (IPQs), most enforcement of quota violations, size, sex, and seasonal infractions occurs at the point of offloading. This remains true for salmon fisheries, particularly in high-volume areas like Bristol Bay and Cook Inlet, where enforcement presence has increased in recent years.

The entire commercial salmon harvest in Alaska is conducted by U.S.-flagged vessels, and foreign fishing is strictly prohibited in Alaska's EEZ. The USCG and AWT continue to collaborate on aerial surveillance, undercover operations, and unmarked patrols to deter and detect violations, especially during peak salmon runs.

²¹⁰ <https://cgmix.uscg.mil/>

²¹¹ <https://dps.alaska.gov/AWT/Home>

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

2024 Commercial Salmon Fisheries

Alaska Division of Wildlife Troopers

On March 7, 2025 AFDF contacted Alaska Division of Wildlife Troopers for information on law enforcement in Alaska's commercial salmon fishery. Captain Derek DeGraaf reported that for commercial fishing activity with the date range of June 1, 2024, through August 1, 2024. For that period, the Alaska Wildlife Troopers made 6838 contacts with commercial fishery participants, 296 warnings were given during these contacts, and 343 persons charged with offenses. The majority of these offenses consisted of fishing in closed waters, and fishing in closed seasons.

Alaska US Coast Guard

On March 7, 2025, AFDF contacted US Coast Guard in Alaska. LCDR Jed Raskie, the D17 Domestic Fisheries Enforcement Section Chief Reported that in calendar year 2024, the Coast Guard in Alaska conducted 19 federal fisheries boardings on the Cook Inlet EEZ salmon fishery. This is the only federal fisheries enforcement currently done for directed commercial salmon fisheries. All other commercial salmon fisheries in Alaska are inside state waters. For those 19 Cook Inlet EEZ salmon boardings, no fisheries violations or safety violations were found. In 2025, USCG will likely conduct a focused patrol during this fishery to ensure safety and compliance in the fleet. USCG work strongly with NOAA OLE for planning and executing these patrols. In 2024, USCG also conducted aerial patrols of the fishery with NOAA OLE onboard to ensure fishers who were fishing in the EEZ (outside of state waters) adhered to requirements such as permits and VMS.

Enforcement priorities/enforceable regulations:

-A federal permit is required (Salmon Federal Fishing Permit, SFFP) to commercially fish.

- -Logbooks must be maintained (this can be electronic).
- -VMS is required.
- -Receivers must have a Registered Salmon Receiver Permit.
- -Processors must have a Salmon Federal Processor Permit.
- -eLandings is required for submitting landing and production data. They need permits to open an account for eLandings.

According to NOAA, 2024 had the following number of participants:

- Salmon Federal Fishing Permit (SFFPs) vessels: 245
- Salmon Federal Processor Permit (SFPPs) shoreside: 8
- Salmon Federal Processor Permit (SFPPs) vessel: 0
- Registered Salmon Receiver Permits: 13

All of the USCG other salmon vessel boardings are conducted under the Commercial Fishing Vessel Safety (CFVS) program. These primarily take place in Bristol Bay and Southeast Alaska.

The last aspect of salmon enforcement USCG focus on is the possible interactions with marine mammals. USCG routinely conduct marine mammal carcass surveys with NOAA Protected Resources Division (PRD) to look for Steller Sea Lions that have bullet wounds. These bullet wounds are likely caused by interactions with fishers in the gillnet fisheries. In 2024 USCG had numerous reports of sea lions washing up with bullet holes in them. Some of these sea lions were taken into evidence for NOAA to conduct further investigations. However, USCG don't have those numbers. Kate Savage and Sadie Wright from NOAA PRD are the best sources of that information. Steller Sea Lions are protected under the Marine Mammal Protection Act (MMPA) and west of 144-degrees longitude they are protected under the Endangered Species Act (ESA). The potential negative interactions between salmon fishers and Steller Sea Lions are something the Coast Guard takes very seriously. However, these violations are sometimes hard to enforce at-sea. Typically, a longer-term investigation by NOAA OLE is required to identify who violated one of these acts.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that effective mechanisms are established for fisheries monitoring, surveillance, control, and enforcement measures including, where appropriate,



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

observer programs, inspection schemes, and vessel monitoring systems, to ensure compliance with the conservation and management measures for the fishery in question. This could include relevant traditional, fisher or community approaches, provided their performance could be objectively verified. Examples may include rules and regulations, enforcement reports.

EVIDENCE:

There is substantial and verifiable evidence that effective mechanisms are in place for monitoring, surveillance, control, and enforcement (MCS&E) in Alaska's salmon fisheries. These mechanisms include a combination of regulatory frameworks, observer programs, electronic monitoring systems, and dockside inspections, all of which are supported by both federal and state agencies.

1. Regulatory and Institutional Framework

The Alaska salmon fishery operates under a robust legal and institutional framework that includes:

State management by the Alaska Department of Fish and Game (ADFG)

Federal oversight by NOAA Fisheries and the U.S. Coast Guard (USCG)

Enforcement by the Alaska Wildlife Troopers (AWT)

These agencies coordinate to enforce conservation and management measures, including gear restrictions, area closures, and escapement goals ¹.

2. Observer Programs and Electronic Monitoring

Since 2021, observer coverage and electronic monitoring (EM) have expanded significantly:

In 2023, about 50% of vessels in federally managed Alaska fisheries had either human observers or EM systems on board ²¹².

EM systems are now used on small fixed gear vessels and trawl catcher vessels, with video footage reviewed to verify discards and compliance.

The North Pacific Observer Program continues to deploy trained observers to monitor bycatch, including salmon, and ensure compliance with federal regulations ²¹³.

3. Vessel Monitoring Systems (VMS) and Catch Reporting

Vessels operating in the EEZ are required to use VMS to track location and ensure they remain within legal fishing zones.

Catch Monitoring Control Plans (CMCPs) and Vessel Monitoring Plans (VMPs) are used to guide data collection and compliance verification ²¹⁴.

4. Dockside Inspections and Community Involvement

AWT and ADFG conduct dockside inspections, including hold checks and offload monitoring, to verify reported catches and enforce size, sex, and seasonal regulations ²¹⁵.

In many regions, local communities and tribal organizations participate in co-management and monitoring, contributing traditional knowledge and local enforcement capacity ²¹⁶.

References:

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)									High

²¹² <https://www.fisheries.noaa.gov/alaska/resources-fishing/monitoring-and-reporting-alaska>

²¹³ https://www.fisheries.noaa.gov/s3/2024-11/Final_2025_ADG.pdf

²¹⁴ <https://www.fisheries.noaa.gov/action/vessel-monitoring-systems-alaska-federal-register-rules-and-notices>

²¹⁵ <https://www.adfg.alaska.gov/index.cfm?adfg=enforcement.main>

²¹⁶ <https://www.adfg.alaska.gov/sb/CSIS/index.cfm?ADFG=main.CommObs>

10.1.	Effective mechanisms shall be established for fisheries monitoring, surveillance, control, and enforcement measures including, where appropriate, observer programs, inspection schemes, and vessel monitoring systems, to ensure compliance with the conservation and management measures for the fishery in question. This could include relevant traditional, fisher, or community approaches, provided their performance could be objectively verified.
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)	
Non-conformance Number (if applicable):	
Full Conformance	

9.4.3.2 Supporting Clause 10.2.

10.2.	Fishing vessels shall not be allowed to operate on the stock under consideration in question without specific authorization.		
Relevance:	Relevant		
Evaluation Parameters			
Process:	There is a mechanism or system established to maintain a record of fishing authorizations.		Met? ☒
EVIDENCE:			
Alaska’s commercial salmon fisheries operate under a limited entry system designed to promote sustainable resource use and economic stability. This system was established by Alaska Statute AS 16.43.140, which prohibits the operation of commercial fishing gear without a valid entry or interim-use permit issued by the Commercial Fisheries Entry Commission (CFEC) ²¹⁷. The CFEC is responsible for: ▪ Issuing permits and vessel licenses for both limited and unlimited fisheries ▪ Conducting due process hearings and appeals for denied applicants ▪ Maintaining a public database of permit holders ▪ Providing online access to permit applications and renewals The CFEC’s mission is to ensure that access to Alaska’s fisheries is managed in a way that supports resource conservation and the economic health of fishing communities ²¹⁸. Since 2021, the CFEC has implemented several updates to improve transparency and accessibility ²¹⁹: ▪ Digital modernization of permit and license services, including online renewals and downloadable forms ▪ Clarified residency requirements for permit eligibility ▪ Updated refund policies for interim-use and limited entry permits ▪ Proposed revisions to fee structures and administrative procedures These changes reflect Alaska’s commitment to maintaining a responsive and equitable permitting system that adapts to evolving fishery conditions and stakeholder needs. In addition to holding a CFEC-issued permit, all individuals participating in commercial salmon fishing must obtain a state-issued Commercial Crewmember License, which is required annually and ensures that all participants are registered and accountable under state law ²²⁰.			
Current status/Appropriateness/Effectiveness:			☒
This mechanism is effective for maintaining updated records of fishing authorizations and ensuring fishing vessels operate with appropriate authorization.			
EVIDENCE:			
The Alaska Department of Fish and Game (ADFG) conducted a comprehensive review of the Commercial Fisheries Entry Commission (CFEC) in 2014, with findings published in early 2015 ²²¹. The review concluded that the limited entry program has been instrumental in stabilizing participation in Alaska’s commercial salmon fisheries. Specifically, it found that the program: “Stabilized the number of fishermen and therefore the amount of gear used in each of the state’s salmon fisheries. It improved management effectiveness and the ability of fishery managers to regulate the fishery so that harvestable surpluses could be taken while still meeting escapement objectives in an orderly and predictable fishery The CFEC maintains online records of all permitted vessels and individuals, which are accessible to enforcement personnel from ADFG and the Alaska Wildlife Troopers (AWT). These records are used in real-time during patrols and inspections to verify compliance with permit requirements and to support enforcement of state fishing laws. Since 2021, the CFEC has:			

²¹⁷ <http://www.adfg.alaska.gov/index.cfm?adfg=fishlicense.main>

²¹⁸ <https://www.adfg.alaska.gov/index.cfm?adfg=divisions.cfecmission>

²¹⁹ <https://www.cfec.state.ak.us/Leon>

²²⁰ <http://www.adfg.alaska.gov/index.cfm?adfg=fishlicense.main>

²²¹ https://www.adfg.alaska.gov/static-f/home/pdfs/cfec_program_review_final_report.pdf

10.2. Fishing vessels shall not be allowed to operate on the stock under consideration in question without specific authorization.

- Expanded digital access to permit and license records for enforcement and public transparency
- Streamlined online services for permit applications, renewals, and vessel licensing
- Continued to support real-time data sharing with ADFG and AWT to enhance enforcement efficiency and regulatory compliance

These developments reinforce the CFEC's role as a cornerstone of Alaska's fisheries management system, ensuring that access to salmon fisheries remains regulated, transparent, and enforceable.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that fishing vessels are not allowed to operate on the stock under consideration in question without specific authorization. Examples may include various data.


EVIDENCE:

Based on the information gathered for this reassessment and updated regulatory information from the Alaska Department of Fish and Game (ADFG) through 2025, there is clear and sufficient evidence that fishing vessels are not allowed to operate in Alaska's commercial salmon fisheries without specific authorization.

Evidence Basis: Vessel Authorization Requirements

1. Legal Framework

Alaska Statute AS 16.43.140 mandates that no person may operate gear in the commercial taking of fishery resources without a valid entry or interim-use permit issued by the Commercial Fisheries Entry Commission (CFEC). This statute remains in full effect and is the foundation of Alaska's limited entry system, which controls access to salmon fisheries.

2. Permit and Licensing System

CFEC-issued permits are required for each individual participating in commercial salmon fishing.

Vessel licenses must also be obtained and are tied to specific fisheries and gear types.

All participants must also hold a valid Commercial Crewmember License issued by the State of Alaska.

These permits and licenses are tracked in a centralized online database maintained by CFEC, which is accessible to enforcement officers from ADFG and the Alaska Wildlife Troopers (AWT) during patrols and inspections.

3. Enforcement and Monitoring

AWT and ADFG officers routinely verify vessel authorization during at-sea boardings and dockside inspections.

The CFEC's digital records are used in real-time to confirm that vessels and individuals are properly licensed.

Unauthorized fishing activity is subject to enforcement actions, including fines, gear seizure, and permit revocation.

Recent Updates Since 2021:

- The 2024–2027 Commercial Salmon Fishing Regulations for regions such as Kodiak, Cook Inlet, and Southeast Alaska reaffirm that only vessels with valid permits may operate in designated fisheries.
- New regulations adopted in 2025 include enhanced reporting requirements and clarified vessel registration procedures, further strengthening the authorization framework.

These measures ensure that only authorized vessels are permitted to harvest salmon, supporting sustainable management and compliance with conservation goals.

References:

Numerical score:		Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
		10			0					10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)										High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)										Full Conformance
Non-conformance Number (if applicable):										

9.4.3.3 Supporting Clause 10.3.

10.3.	States involved in the fishery shall, in accordance with international law, and within the framework of fisheries management organizations or arrangements, cooperate to establish systems for monitoring, control, surveillance, and enforcement of applicable measures with respect to fishing operations and related activities in waters outside the States jurisdiction.		
Relevance:	Not relevant. Note. Not applicable if the fishery does not occur outside the State's EEZ. Alaska commercial salmon fisheries occur entirely within the State's jurisdiction and EEZ.		
Evaluation Parameters			Met?
Process: <i>There is a mechanism or system established to conduct enforcement operations outside the State's jurisdiction.</i>			☐
EVIDENCE:			
Current status/Appropriateness/Effectiveness: <i>transboundary, shared, straddling, highly migratory or high seas, then the Standard need only be concerned with the effectiveness and suitability of the monitoring, surveillance, control, and enforcement activities at the States level for the fishery of which the unit of certification is a part. If the unit of certification is part of a States fleet fishing on a transboundary, shared, straddling, highly migratory or high seas stock, then it is still likely to be the effectiveness and suitability of the monitoring, surveillance, control, and enforcement activities at the States level that shall be assessed. If the unit of certification covers all the fishing on the stock under consideration, then the monitoring, surveillance, control, and enforcement of all of the States fleets is of concern and shall be assessed (to ensure full consideration of total fishing mortality on the stock under consideration).</i>			☐
EVIDENCE:			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that States involved in the fishery do, in accordance with international law, and within the framework of fisheries management organizations or arrangements, cooperate to establish systems for monitoring, control, surveillance, and enforcement of applicable measures with respect to fishing operations and related activities in waters outside their States jurisdiction. Examples may include enforcement reports.</i>			☐
EVIDENCE:			
References:			
Numerical score:	Starting score	– (Number of EPs <u>NOT</u> met x 3)	= Overall score
	10		NA
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			Low/Medium/High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Critical NC/Major NC/Minor NC/Full Conformance
Non-conformance Number (if applicable):			

9.4.3.4 Supporting Clause 10.3.1.

10.3.1.	Fishery management organizations which are members of or participants in fisheries management organizations or arrangements, shall implement internationally agreed measures adopted in the framework of such organizations or arrangements and consistent with international law to deter the activities of vessels flying the flag of non-members or non-participants engaging in activities that undermine the effectiveness of conservation and management measures established by such organizations or arrangements. In that respect, port States shall also proceed, as necessary, to assist other States in achieving the objectives of the FAO CCRF (1995), and should make known to other States details of regulations and measures they have established for this purpose without discrimination for any vessel of any other State.		
Relevance:	Not relevant. Note: Not applicable if the fishery does not occur outside the State's Exclusive Economic Zone. Alaska commercial salmon fisheries occur entirely within the State's jurisdiction and EEZ		
Evaluation Parameters			Met?
Process: <i>There are regulations established against vessels flying the flag of non-member or non-participant States, which may engage in activities that undermine the effectiveness of conservation and management measures established by fisheries management organizations .</i>			☐
EVIDENCE:			
Current status/Appropriateness/Effectiveness: <i>These measures are effective in deterring such practices.</i>			☐
EVIDENCE:			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organizations which are members of or participants in fisheries management organizations or arrangements implement internationally agreed measures adopted in the framework of such organizations or arrangements and consistent with international law to deter the activities of vessels flying the flag of non-members or non-participants engaging in activities which undermine the effectiveness of conservation and management measures established by such organizations or arrangements. In that respect, port States also proceed, as necessary, to achieve and to assist other States in achieving the objectives of the FAO CCRF, and make known to other States details of regulations and measures they have established for this purpose without discrimination for any vessel of any other State. Examples may include enforcement or other reports.</i>			☐
EVIDENCE:			
References:			
Numerical score:	Starting score 10	- (Number of EPs NOT met x 3) =	Overall score NA
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			Low/Medium/High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Critical NC/Major NC/Minor NC/Full Conformance
Non-conformance Number (if applicable):			

9.4.3.5 Supporting Clause 10.4.

10.4.	Flag States shall ensure that no fishing vessels are entitled to fly their flag, fish on the high seas or in waters under the jurisdiction of other States, unless such vessels have been issued with a Certificate of Registry and have been authorized to fish by the competent authorities. Such vessels shall carry on board the Certificate of Registry and their authorization to fish.		
Relevance:	Not relevant. Note: Not applicable if no foreign vessels fish in the State's EEZ, or if its vessels do not fish in high seas or in another State's EEZ. Alaska commercial salmon fisheries occur entirely within the State's jurisdiction and EEZ		
Evaluation Parameters			Met?
Process: <i>There are foreign vessels fishing in State's EEZ. State's EEZ vessels do not fish in high seas or in another State's EEZ.</i>			☐
EVIDENCE:			
Current status/Appropriateness/Effectiveness: <i>These vessels have been issued with a Certificate of Registry and they are required to carry it on board.</i>			☐
EVIDENCE:			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the flag State ensures that no fishing vessels are entitled to fly their flag, fish on the high seas or in waters under the jurisdiction of other States, unless such vessels have been issued with a Certificate of Registry and have been authorized to fish by the competent authorities. Such vessels shall carry on board the Certificate of Registry and their authorization to fish. Examples may include various laws, regulations, and other data or reports.</i>			☐
EVIDENCE:			
References:			
Numerical score:	Starting score 10	– (Number of EPs <u>NOT</u> met x 3) =	Overall score NA
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			Low/Medium/High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Critical NC/Major NC/Minor NC/Full Conformance
Non-conformance Number (if applicable):			

9.4.3.6 Supporting Clause 10.4.1.

10.4.1.	Fishing vessels authorized to fish on the high seas or in waters under the jurisdiction of a State other than the flag State shall be marked in accordance with uniform and internationally recognizable vessel marking systems such as the FAO Standard Specifications and Guidelines for Marking and Identification of Fishing Vessels.		
Relevance:	Not relevant. Note: Not applicable if no foreign vessels fish in the State's EEZ or if its vessels do not fish in high seas or in another State's EEZ. Alaska commercial salmon fisheries occur entirely within the State's jurisdiction and EEZ		
Evaluation Parameters			Met?
Process: <i>There are foreign vessels fishing in State's EEZ. State's EEZ vessels do not fish in high seas or in another State's EEZ.</i>			☐
EVIDENCE:			
Current status/Appropriateness/Effectiveness: <i>Foreign vessels authorized to fish in the State's EEZ or its vessels fishing in another State's EEZ have been marked according to international guidelines.</i>			☐
EVIDENCE:			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that fishing vessels authorized to fish on the high seas or in waters under the jurisdiction of a State other than the flag State, are marked in accordance with uniform and internationally recognizable vessel marking systems such as the FAO Standard Specifications and Guidelines for Marking and Identification of Fishing Vessels. Examples may include various laws, regulations, and other data or reports.</i>			☐
EVIDENCE:			
References:			
Numerical score:	Starting score 10	- (Number of EPs <u>NOT</u> met x 3) =	Overall score NA
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			Low/Medium/High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Critical NC/Major NC/Minor NC/Full Conformance
Non-conformance Number (if applicable):			

9.4.4 Fundamental Clause 11. Framework for sanctions

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

9.4.4.1 Supporting Clause 11.1.

11.1.	States laws of adequate severity shall be in place that provide for effective sanctions.	
Relevance:	Relevant	
Evaluation Parameters		Met?
Process: The system of States laws is of adequate severity to provide for effective sanctions.		☒
EVIDENCE: Alaska’s commercial salmon fisheries are governed by the Alaska Fish and Game Code, codified under Alaska Statute Title 16, which provides the legal authority for the development, implementation, and enforcement of fisheries regulations. This framework ensures that salmon resources are managed sustainably and that violations are met with appropriate legal consequences. <u>Enforcement Authority and Penalties</u> Under Alaska Statute 16.05.150, enforcement authority is granted to: - Alaska Department of Fish and Game (ADFG) employees - Alaska Wildlife Troopers (AWT) - State police officers - Other deputized individuals These personnel are empowered to enforce all provisions of the Fish and Game Code, including those specific to commercial salmon fisheries. Violations of fishing regulations may result in: - Fines - Suspension or revocation of fishing permits - Imprisonment Seizure of catch, gear, and/or vessels These penalties are designed to deter illegal activity and uphold the integrity of Alaska’s fisheries management system. <u>Interagency Collaboration</u> Enforcement is carried out through a coordinated effort involving: - ADFG and AWT for state-level enforcement - United States Coast Guard (USCG) for maritime patrol and safety enforcement - NOAA’s Office of Law Enforcement (OLE) for federal compliance, particularly in the EEZ This multi-agency approach ensures comprehensive coverage from inland waters to offshore zones. Recent Developments (Since 2021) - Enhanced digital enforcement tools: ADFG and AWT now utilize real-time access to CFEC’s online permit and vessel license databases during inspections and patrols. - Increased patrols during peak salmon runs: Especially in high-traffic areas like Bristol Bay and Prince William Sound, enforcement presence has been expanded to deter illegal fishing. - Updated enforcement protocols: New training and coordination procedures have been implemented to improve response times and interagency communication. These updates reflect Alaska’s ongoing commitment to maintaining a rigorous, transparent, and enforceable regulatory system that supports both conservation and the economic viability of its commercial salmon fisheries.		
Current status/Appropriateness/Effectiveness: There is evidence to substantiate that States laws are of adequate severity to provide for effective sanctions. The evidence here includes largely (a) whether laws set out effective penalty provisions and the courts respond in a manner that deters		☒

11.1.	States laws of adequate severity shall be in place that provide for effective sanctions.
further or repeat offenses, (b) the views of the industry, other stakeholders, and the general public, and (c) the outcomes and associated trends of the enforcement efforts when measured against appropriate performance indicators.	
EVIDENCE:	
Alaska’s Fish and Game Code, codified under Title 16, establishes a strong legal foundation for enforcing commercial fishing regulations ²²² . These laws are rigorously upheld by the Alaska Department of Fish and Game (ADFG), the Alaska Wildlife Troopers (AWT), and supporting federal agencies such as the U.S. Coast Guard (USCG) and NOAA’s Office of Law Enforcement.	
Violations of fishing laws are met with strict penalties, including:	
Fines Suspension or revocation of fishing permits Imprisonment Seizure of catch, gear, and/or vessels²²³	
These penalties are not only punitive but also serve as a strong deterrent. Despite the vast geographic scope and high activity levels of Alaska’s commercial salmon fisheries, relatively few violations are reported annually. This low rate of infractions is attributed to both the severity of penalties and the high visibility of enforcement patrols ²²⁴ .	
Recent Developments (Since 2021)	
Expanded digital enforcement tools: ADFG and AWT now use real-time access to permit and vessel databases during inspections, improving efficiency and accuracy in detecting unauthorized activity²²⁵. Increased enforcement presence: Patrols have intensified during peak salmon seasons, particularly in high-traffic areas like Bristol Bay and Cook Inlet, where enforcement officers conduct both at-sea and dockside inspections²²⁶. Targeted enforcement campaigns: AWT has launched seasonal operations focused on high-risk violations, such as fishing in closed areas or exceeding harvest limits²²⁷.	
When violations do occur, enforcement actions are often swift and impactful. Penalties such as permit suspension or gear confiscation not only address the immediate offense but also help prevent future violations, reinforcing a culture of compliance throughout the fleet.	
Evidence Basis:	
The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that States laws of adequate severity are in place that provide for effective sanctions. Examples may include various laws, regulations, and other data or reports.	
EVIDENCE:	
Evidence Basis: Adequacy and Severity of Sanctions in Alaska’s Fisheries Law	
1. Legal Authority and Enforcement Structure	
Alaska’s Fish and Game Code, codified under Alaska Statute Title 16, provides the legal framework for regulating commercial fisheries. Enforcement authority is granted to:	
Alaska Department of Fish and Game (ADFG) Alaska Wildlife Troopers (AWT) State police and deputized individuals	
These agencies are empowered to enforce all provisions of the code, including those specific to salmon fisheries.	
2. Severity of Sanctions	
Violations of Alaska’s fisheries laws are met with strict penalties, including:	
Fines	

²²² <http://www.touchngo.com/lglcntr/akstats/Statutes/Title16/Chapter05.htm>

²²³ <http://www.touchngo.com/lglcntr/akstats/Statutes/Title16/Chapter05/Section710.htm>

²²⁴ <https://www.fisheries.noaa.gov/about/office-law-enforcement>

²²⁵ <https://www.cfec.state.ak.us/>

²²⁶ <https://dps.alaska.gov/AST/PIO/PressReleases/Wildlife-Troopers-Deploy-Significant-Resources-for>

²²⁷ <https://dailydispatch.dps.alaska.gov/Home/Display?dateReceived=7/7/2024%2012:00:00%20AM>

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

- Suspension or revocation of fishing permits
- Imprisonment
- Seizure of catch, gear, and/or vessels

These penalties are designed to deter illegal activity and are applied consistently across the state's fisheries.

3. Enforcement in Practice

Despite the vast scale of Alaska's commercial salmon fisheries, relatively few violations are reported, which is attributed to:

- The severity of penalties
- High visibility of enforcement patrols
- Real-time access to digital permit and license databases used by enforcement officers

Recent Developments (Since 2021)

- Expanded enforcement patrols during peak salmon seasons, especially in high-traffic areas like Bristol Bay and Southeast Alaska
- Updated mesh size and area restrictions to improve compliance and conservation outcomes
- Night closures and gear restrictions enforced with increased frequency to prevent overharvest and illegal fishing

These updates demonstrate that Alaska's legal and enforcement systems are not only adequate but are also actively evolving to address emerging challenges in fisheries management.

References:

Numerical score:	Starting score	Number of EPs <u>NOT</u> met					Overall score
	10	-	(	0	x	3	) = 10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)							
High							
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)							
Full Conformance							
Non-conformance Number (if applicable):							

9.4.4.2 Supporting Clause 11.2.

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 noncompliance with conservation and management measures.
Relevance:	Relevant
Evaluation Parameters	
Process:	
<i>The system of sanctions in place is sufficiently severe to deter violations and illegal activities. The system shall be considered adequate in severity if the potential sanctions include fines, suspension or withdrawal of permission to fish, and confiscation of catch or equipment.</i>	
Met?	
☒	
EVIDENCE:	
According to Alaska Statute 16.43.850²²⁸, a demerit system involving serious sanctions has been developed and is enforced over commercial fishing vessels in Alaska²²⁹. This Statute states that: (a) For the purpose of identifying frequent violators of commercial fishing laws in salmon fisheries, the commission shall adopt regulations establishing a uniform system for the suspension of commercial salmon fishing privileges by assigning demerit points for convictions for violations of commercial fishing laws in salmon fisheries that are reported to the commission under Alaska Statute 16.43.880. The commission shall assess demerit points against a permit holder for each violation of commercial fishing laws in a salmon fishery in accordance with (b) and (c) of this section. The commission shall assess points against a permit holder for the salmon fishery in which the violation of commercial fishing laws occurred. (b) The commission shall assess demerit points against a permit holder for a conviction of a violation of commercial fishing laws in a salmon fishery under AS 16.05.722, 16.05.723, 16.05.831; AS 16.10.055, 16.10.070 - 16.10.090, 16.10.100, 16.10.110, 16.10.120, 16.10.200 - 16.10.220, and 16.10.760 - 16.10.790 for the following violations in accordance with this schedule: (1) fishing in closed waters 6 points; (2) fishing during closed season or period 6 points; (3) fishing with more than the legal amount of gear 4 points; (4) fishing with gear not allowed in fishery 6 points; (5) fishing before expiration of transfer period 6 points; (6) interfering with commercial fishing gear 4 points; (7) fishing with more than the legal amount of gear on vessel 4 points; (8) improper operation of fishing gear 4 points; (9) permit holder not present when required 4 points; (10) fishing with underlength or overlength vessel 6 points; (11) wanton waste of fishery resources 4 points. (a) Notwithstanding (b) of this section, if a permit holder's first conviction of a violation of commercial fishing laws in a salmon fishery in a 36-month period is a conviction under AS 16.05.722, the number of demerit points assessed against the permit holder for the violation must be one-half of the points assessed for the violation under (b) of this section. (b) The commission shall suspend a permit holder's commercial salmon fishing privileges for a salmon fishery for a period of (1) one year if the permit holder accumulates 12 or more points during any consecutive 36-month period as a result of convictions for violations of commercial fishing laws in the salmon fishery; (2) two years if the permit holder accumulates 16 or more points during any consecutive 36-month period as a result of convictions for violations of commercial fishing laws in the salmon fishery; (3) three years if the permit holder accumulates 18 or more points during any consecutive 36-month period as a result of convictions for violations of commercial fishing laws in the salmon fishery.	

²²⁸ <http://touchngo.com/lglcntr/akstats/Statutes/Title16/Chapter43/Section850.htm>

²²⁹ <https://www.cfec.state.ak.us/demerits/DemeritPoints.pdf>

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 noncompliance with conservation and management measures.

Following upon this law and in accordance with AS 16.43.860²³⁰

- (a) A permit holder whose commercial salmon fishing privileges for a salmon fishery are suspended under AS 16.43.850 - 16.43.895 may not obtain an entry permit or interim-use permit for that salmon fishery during the period of the suspension of the privileges. During the period for which the permit holder's privilege to obtain an entry permit or interim-use permit for a salmon fishery is suspended under this section, the commission may not issue a permit card to the permit holder for that fishery.
- (b) A permit holder whose privilege of obtaining a commercial fishing permit for a salmon fishery is suspended under AS 16.43.850 - 16.43.895 may not
 - (1) engage in the salmon fishery under a crewmember license; or
 - (2) lease or rent the permit holder's interest in a boat to another person if the boat would be used in the salmon fishery for which the permit holder's fishing privileges are suspended.
- (c) If, during the period for which a permit holder's commercial fishing privileges for a salmon fishery are suspended, the commission establishes a limited entry system for the salmon fishery, the permit holder shall be eligible to obtain an entry permit for that fishery to the extent that the permit holder qualifies for the entry permit under regulations adopted by the commission. If the permit holder qualifies for an entry permit for the fishery, the commission shall withhold issuance of the entry permit until the period of the suspension imposed under AS 16.43.850 - 16.43.895 has expired.
- (d) The commission may not transfer a commercial fishing permit for a salmon fishery under an emergency transfer under AS 16.43.180 if, at the time of the application for the emergency transfer, the permit holder's commercial salmon fishing privileges for the salmon fishery have been suspended.

Moreover, Alaska Statute 16.5.723 states that:

- a) A person who negligently violates AS 16.05.440 - 16.05.690, or a regulation of the Board of Fisheries or the department governing commercial fishing, is guilty of a misdemeanor and in addition to punishment under other provisions in this title, including AS 16.05.195 and 16.05.710, is punishable upon conviction by a fine of not more than \$15,000 or by imprisonment for not more than one year, or by both. In addition, the court shall order forfeiture of any fish, or its fair market value, taken or retained as a result of the commission of the violation, and the court may forfeit any vessel and any fishing gear, including any net, pot, tackle, or other device designed or employed to take fish commercially, that was used in or in aid of the violation. Any fish, or its fair market value, forfeited under this subsection may not also be forfeited under AS 16.05.195. For purposes of this subsection, it is a rebuttable presumption that all fish found on board a fishing vessel used in or in aid of a violation, or found at the fishing site, were taken or retained in violation of AS 16.05.440 - 16.05.690 or a commercial fisheries regulation of the Board of Fisheries or the department, and it is the defendant's burden to show by a preponderance of the evidence that fish on board or at the site were lawfully taken and retained.
- b) If a person is convicted under this section of one of the following offenses, then, in addition to the penalties imposed under (a) of this section, the court may impose a fine equal to the gross value of the fish found on board or at the fishing site at the time of the violation:
 - (1) commercial fishing in closed waters;
 - (2) commercial fishing during a closed period or season;
 - (3) commercial fishing with unlawful gear, including a net, pot, tackle, or other device designed or employed to take fish commercially; or
 - (4) commercial fishing without a limited entry permit holder on board if the holder is required by law or regulation to be present.
- c) Upon a third misdemeanor conviction within a period of 10 years for an offense listed in (b) of this section or any combination of offenses listed in (b) of this section, the court shall impose, in addition to any penalties imposed under (a) of this section, a

²³⁰ <http://touchngo.com/iglcnr/akstats/Statutes/Title16/Chapter43/Section860.htm>

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 noncompliance with conservation and management measures.

fine equal to three times the gross value of the fish found on board or at the fishing site at the time of the offense, or a fine equal to \$10,000, whichever is greater.

Together, these laws assign severe sanctions for violations of commercial salmon fishery regulations that include suspension of fishing permits, in addition to monetary fines and other penalties.

Current status/Appropriateness/Effectiveness:

There is evidence to substantiate that sanctions for violations of regulations (e.g., suspension, withdrawal, or refusals of fishing permit or of the right to fish) are adequate in severity to secure compliance and discourage violations.



EVIDENCE:

Alaska Statutes AS 16.43.850 and AS 16.43.860 continue to serve as effective deterrents against violations of commercial salmon fishery regulations by imposing penalties that reflect the severity of the offense and restricting future participation in the fishery. Since 2021, enforcement has increasingly relied on a demerit point system administered by the Commercial Fisheries Entry Commission (CFEC). Under this system, permit holders accrue points for specific violations—such as fishing in closed waters or using illegal gear—and risk suspension of their fishing privileges if they accumulate 12 or more points within a 36-month period²³¹. Suspensions can last from one to three years, during which the individual is barred not only from fishing but also from crewing or leasing vessels in the affected fishery²³². These measures reinforce compliance by tying penalties directly to access and operational capacity within the fishery.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that sanctions applicable in respect of violations and illegal activities are adequate in severity to be effective in securing compliance and discouraging violations wherever they occur. Sanctions are in force that affects authorization to fish and/or to serve as masters or officers of a fishing vessel, in the event of non-compliance with conservation and management measures. Examples may include various laws, regulations, and other data or reports.



EVIDENCE:

The availability, quality, and adequacy of evidence confirm that sanctions for violations in Alaska's commercial salmon fisheries are sufficiently severe to ensure compliance and deter illegal activities.

The Alaska Department of Fish and Game (ADFG), in collaboration with the Alaska Wildlife Troopers and the Commercial Fisheries Entry Commission (CFEC), enforces a robust legal framework. This includes:

- AS 16.43.850 and AS 16.43.860, which authorize the suspension or revocation of limited entry permits for serious violations²³³.
- A demerit point system that assigns points for specific infractions. Accumulating 12 or more points within 36 months can result in suspension of fishing privileges for up to three years.
- Sanctions that extend beyond fishing—individuals under suspension cannot serve as vessel masters, crew, or lease permit rights during the suspension period.

References:

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10
Corresponding Confidence Rating:									High

²³¹ <https://www.cfec.state.ak.us/demerits/DemeritPoints.pdf>

²³² <https://www.cfec.state.ak.us/demerits/DemeritPoints.pdf>

²³³ <https://casetext.com/statute/alaska-statutes/title-16-fish-and-game/chapter-1643-regulation-of-entry-into-alaska-commercial-fisheries/article-08-point-system-for-commercial-fishing-violations-in-salmon-fisheries>

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 noncompliance with conservation and management measures.
(10 = High; 4 or 7 = Medium; 1 = Low)	
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)	Full Conformance
Non-conformance Number (if applicable):	

9.4.4.3 Supporting Clause 11.3.

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.
Relevance:	Relevant If not relevant provide evidence for why this is the case (e.g. This Clause is not relevant because...).
Evaluation Parameters	Met?
Process: <i>The system of sanctions in place 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. The fisheries management organization also ensures the consistent and transparent application of sanctions.</i>	☒
EVIDENCE: All commercial salmon harvests in Alaska must be reported to the Alaska Department of Fish and Game (ADFG) through either traditional Fish Tickets or the electronic eLandings system. These reports are required to be submitted within seven days of landing or the first point of sale, ensuring that all legally caught commercial salmon are documented²³⁴. Sanctions for illegal commercial salmon fishing in Alaska remain stringent and are codified under the Alaska Fish and Game Code (AS 16.05), with specific enforcement mechanisms detailed in AS 16.43.850 through AS 16.43.880. These laws authorize a range of penalties, including: ▪ Substantial fines ▪ Imprisonment ▪ Suspension or revocation of limited entry permits ▪ Forfeiture of illegally harvested fish, fishing gear, and vessels Since 2021, enforcement has been reinforced through the Commercial Fisheries Entry Commission's demerit point system, which tracks violations and can lead to multi-year suspensions of fishing privileges for repeat offenders. These suspensions also prohibit individuals from acting as vessel masters or crew during the penalty period²³⁵. These measures are designed to uphold the integrity of Alaska's sustainable fisheries management and are regularly reviewed to ensure they remain effective in deterring non-compliance.	
Current status/Appropriateness/Effectiveness:	☒

²³⁴ <https://www.adfg.alaska.gov/index.cfm%3Fadfg%3Dfishlicense.fishtickets>

²³⁵ <https://www.akleg.gov/basis/statutes.asp#24>

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.

There is evidence to substantiate that sanctions for violations of regulations are of sufficient severity to effectively prevent, deter, and eliminate IUU fishing and to deprive offenders of the benefits accruing from such fishing. Sanctions are applied transparently and consistently across the board.

EVIDENCE:

The procedures and criteria for applying sanctions in Alaska's commercial salmon fisheries are clearly outlined in AS 16.43.850, which establishes a structured demerit point system based on the number and frequency of violations²³⁶. This system is designed to escalate penalties proportionally with repeated offenses, ensuring that enforcement is both fair and effective.

Under this statute, the Commercial Fisheries Entry Commission (CFEC) assigns demerit points to permit holders following convictions for specific violations, such as fishing in closed waters or using unauthorized gear²³⁷. The severity of the penalty increases with the accumulation of points:

12 points in 36 months → 1-year suspension

16 points in 36 months → 2-year suspension

18 points in 36 months → 3-year suspension

During a suspension, the individual is not only barred from fishing but also from crewing or leasing vessels in the affected fishery.

Since 2021, the CFEC has continued to maintain and publicly update an online list of individuals with demerit points, covering all commercial fisheries, including salmon. This transparency supports accountability and reinforces the deterrent effect of the system

Additionally, the CFEC has clarified that demerit points apply to both the permit holder and any transferee if a violation occurs during an emergency permit transfer, further strengthening the system's reach and fairness.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fisheries management organization ensures 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. The fisheries management organization also ensures the consistent and transparent application of sanctions. Examples may include various laws, regulations, and other data or reports.



EVIDENCE:

There is sufficient and credible evidence to confirm that Alaska's fisheries management system enforces sanctions for illegal, unreported, and unregulated (IUU) fishing that are severe enough to deter violations and eliminate the benefits of non-compliance. The legal framework is grounded in the Alaska Fish and Game Code (AS 16.05) and further detailed in AS 16.43.850–880, which establish a civil sanction regime based on an administrative penalty system.

The Commercial Fisheries Entry Commission (CFEC) administers a demerit point system that escalates penalties based on the frequency and severity of violations. This includes:

- Suspension or revocation of fishing permits
- Fines and forfeiture of catch, gear, and vessels
- Prohibition from serving as vessel masters or crew during suspension periods

Alaska's fisheries management framework, in coordination with federal agencies, continues to enforce a robust system of sanctions aimed at deterring and eliminating IUU fishing. This includes both vessel-based and individual-level accountability.

²³⁶ <https://www.cfec.state.ak.us/demerits/DemeritPoints.pdf>

²³⁷ https://www.cfec.state.ak.us/demerits/WD0100_A.htm

- 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.**

Administrative Penalty Scheme and Demerit System

The Commercial Fisheries Entry Commission (CFEC) maintains a demerit point system that applies administrative penalties for violations of Alaska's fisheries laws. This system escalates penalties based on the frequency and severity of offenses, including permit suspensions and revocations. The CFEC publicly lists individuals and permit holders with demerit points, ensuring transparency and accountability²³⁸.

Federal Coordination and Enforcement

The 2024 Report of the Maritime Security and Fisheries Enforcement (MSAFE) Act Interagency Working Group outlines a coordinated federal response to IUU fishing, with NOAA, the U.S. Coast Guard, and other agencies working together to investigate, interdict, and prosecute IUU activities²³⁹. While this is a national initiative, Alaska plays a key role due to its extensive commercial fisheries and proximity to international waters.

Updated U.S. Strategy on IUU Fishing

NOAA's 2023–2028 strategy emphasizes strengthening enforcement mechanisms, including administrative penalties and civil sanctions, to deprive offenders of the economic benefits of IUU fishing²⁴⁰. Alaska's alignment with this strategy is evident in its continued investment in monitoring, control, and surveillance systems, including electronic reporting and observer programs.

References:

Numerical score:	Starting score	– (Number of EPs NOT met x 3) =				Overall score
	10		0			10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)						High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)						Full Conformance
Non-conformance Number (if applicable):						

²³⁸ <https://www.cfec.state.ak.us/>

²³⁹ <https://www.fisheries.noaa.gov/s3/2024-06/2024-MSAFE-Report-Final.pdf>

²⁴⁰ <https://www.noaa.gov/news-release/new-us-strategy-for-combating-illegal-unreported-and-unregulated-fishing>

9.4.4.4 Supporting Clause 11.4.

11.4.	Flag States shall take enforcement measures towards fishing vessels entitled to fly their flag, which have been found by the State to have contravened applicable conservation and management measures. The State shall, where appropriate, make the contravention of such measures an offense under national legislation.		
Relevance:	Not relevant. Note: Not applicable if no foreign vessels fish in the State's EEZ or if its vessels do not fish in high seas or in another State's EEZ. Not applicable because Alaska's commercial salmon fisheries are conducted entirely within State waters and no foreign vessels fish within Alaska's EEZ.		
Evaluation Parameters			Met?
Process: If applicable, the system of enforcement measures is effective for foreign vessels fishing in the State's EEZ or for its vessels fishing in high seas or in another State's EEZ.			☐
EVIDENCE:			
Current status/Appropriateness/Effectiveness: There is evidence to substantiate enforcement action in these cases (i.e., boarding, violations).			☐
EVIDENCE:			
Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that flag States take enforcement measures with fishing vessels entitled to fly their flag if the vessels have been found by the State to have contravened applicable conservation and management measures. These enforcement measures will include, where appropriate, making the contravention of such measures an offense under national legislation. Examples may include various laws, regulations, and other data or enforcements reports.			☐
EVIDENCE:			
References:			
Numerical score:	Starting score 10	- (Number of EPs <u>NOT</u> met x 3) =	Overall score NA
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			Low/Medium/High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Critical NC/Major NC/Minor NC/Full Conformance
Non-conformance Number (if applicable):			

9.5 Section D: Serious Impacts of the Fishery on the Ecosystem

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

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.

9.5.1.1 Supporting Clause 12.1.

12.1.	The fishery management organization shall assess the impacts of environmental factors on target stocks and associated or dependent species in the same ecosystem, and the relationship among the populations in the ecosystem.		
Relevance:	Relevant		
Evaluation Parameters			
Process:	There is a process that allows assessment and monitoring of environmental factors (e.g., climatic, oceanographic) on target and associated species in the same ecosystem, and that assess the relationships between species in the ecosystem.		Met? ☒
EVIDENCE:			
Both ADFG and NOAA Fisheries regularly monitor oceanographic and biological conditions that influence salmon populations. They share and incorporate these data into salmon survival and abundance forecasts that are used by ADFG’s fisheries management biologists to set escapement and harvest goals, and shape regulations in accordance. This process is consistent with Alaska’s Policy for the Management of Sustainable Salmon Fisheries, ²⁴¹ which explicitly recognizes and accounts for the influence of variable environmental conditions on Alaska’s salmon stocks. This policy states that “salmon escapement goal ranges should allow for uncertainty associated with measurement techniques, observed variability in the salmon stock measured, changes in climatic and oceanographic conditions, and varying abundance within related populations of the salmon stock measured”. The Policy further states that “in formulating fishery management plans designed to achieve maximum or optimum salmon production, the board and department must consider factors including environmental change, habitat loss or degradation, data uncertainty, limited funding for research and management programs, existing harvest patterns, and new fisheries or expanding fisheries”.			
Current status/Appropriateness/Effectiveness:			☒
There is evidence that assessments have been conducted to determine the impacts of environmental factors on the target and associated or dependent species (to the stock) in the same ecosystems, and on the relationships among these species. The results of these studies are in sufficient detail to allow informed management of the fishery. This requirement is intended to provide information about the current understanding of the overall marine ecosystem structure and relationships among the various species, coupled with environmental monitoring. More information about the effects of the fishery on specific ecosystem components (e.g., associated bycatch and ETPs species interactions, gear-habitat disturbance, ecosystem and food-webs impacts, etc.) are assessed in the following clauses of this section.			
EVIDENCE:			
Highly predictive models developed by NOAA to forecast pink salmon harvest incorporate indices of juvenile abundance and sea water temperature, as well as other climatic and oceanographic information. ²⁴² ADFG and NOAA’s have similarly developed models that incorporate environmental data, including those collected by the Alaska Ocean Observing System, ²⁴³ to predict annual returns of Chinook salmon to the Yukon and surrounding region. ²⁴⁴ Sibling models ²⁴⁵ are commonly used to predict returns of Alaska			

²⁴¹ <http://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2016-2017/jointcommittee/5aac39.pdf>

²⁴² <https://www.fisheries.noaa.gov/alaska/sustainable-fisheries/forecasting-pink-salmon-harvest-southeast-alaska>

²⁴³ <https://aoos.org/>

²⁴⁴ Mundy et al. (2011) <http://dev.aoos.org/wp-content/uploads/2012/06/ICES-JMS-Mundy-and-Evenson-2011-Yukon-chinook-timing-full.pdf>, <https://aoos.org/2019-run-timing-outlook-and-forecast-summary-chinook-salmon-yukon-river-delta/>

²⁴⁵ Haeseker et al. (2007) <https://afspubs.onlinelibrary.wiley.com/doi/abs/10.1577/M06-094.1>

12.1.	The fishery management organization shall assess the impacts of environmental factors on target stocks and associated or dependent species in the same ecosystem, and the relationship among the populations in the ecosystem.				
sockeye ²⁴⁶ and chum salmon ²⁴⁷ Private non-profit salmon hatcheries also monitor environmental and biological conditions – such as zooplankton counts - in Alaskan waters to develop harvest forecasts ²⁴⁸ and optimize release timing of juvenile fish.					
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization assesses the impacts of environmental factors on target and other species belonging to the same ecosystem or associated with or dependent upon the target species, and the relationship among the populations in the ecosystem. Examples may include various stock and ecosystems assessment reports.</i>					☒
EVIDENCE: Salmon harvest forecasts that utilize extensive biological, oceanographic and other environmental data are regularly posted online and updated by NOAA ²⁴⁹ and ADFG. ²⁵⁰ This information is readily available to managers and the public.					
References:	See citations in evidence				
Numerical score:	Starting score	Number of EPs <u>NOT</u> met			Overall score
	10	- (	0	x 3) =	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)					High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)					Full Conformance
Non-conformance Number (if applicable):					

9.5.1.2 Supporting Clause 12.2.

12.2.	The most probable adverse impacts from human activities, including fishery effects on the ecosystem/environment, shall be assessed and, where appropriate, addressed and or/corrected, taking into account available scientific information and local knowledge. This may take the form of an immediate management response or a further analysis of the identified risk. In this context, full consideration should be given to the special circumstances and requirements in developing fisheries, including financial and technical assistance, technology transfer, training, and scientific cooperation. In the absence of specific information on the ecosystem impacts of fishing on the unit of certification, generic evidence based on similar fishery situations can be used for fisheries with low risk of severe adverse impact. However, the greater the risk, the more specific evidence shall be necessary to ascertain the adequacy of mitigation measures. Note. Clause 12.2 is a non-scoring clause with no associated Evaluation Parameters.

9.5.1.3 Supporting Clause 12.2.1.

12.2.1.	The fishery management organization shall consider the most probable adverse impacts of the unit of certification on main associated species (Appendix 1, Part 3 and 7), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) shall be monitored and shall 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 arise, effective remedial action shall be taken.
Relevance:	Relevant

²⁴⁶ <https://www.adfg.alaska.gov/static/applications/dcfnewsrelease/1125252246.pdf>,

<https://www.adfg.alaska.gov/static/applications/dcfnewsrelease/1007623443.pdf>

²⁴⁷ <https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmonforecast>

²⁴⁸ <http://www.dipac.net/forecasts>

²⁴⁹ <https://www.fisheries.noaa.gov/alaska/sustainable-fisheries/forecasting-pink-salmon-harvest-southeast-alaska>

²⁵⁰ <https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyfisherysalmon.salmonforecast>

12.2.1. The fishery management organization shall consider the most probable adverse impacts of the unit of certification on main associated species (Appendix 1, Part 3 and 7), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) shall be monitored and shall 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 arise, effective remedial action shall be taken.

Evaluation Parameters	Met?
Process: <i>There is a process that accounts for the most probable adverse impacts of the unit of certification on main associated species. This may take the form of an immediate management response or a further analysis of the identified risk. In the absence of specific information on such impacts of fishing for the unit of certification, generic evidence based on similar fishery situations can be used for fisheries with low risk of severe adverse impact. However, the greater the risk, the more generic evidence based on similar fishery situations, then, based on the risk of severe adverse impact, the information shall be of higher precision for higher risk. For example, any of the following elements can be considered high risk for a fishery: keystone species, species with relative low growth rates or high catchability, fisheries with significant ETP or bycatch of nontarget fishery resources (or non-target stocks, species, harvests, or discards), or fisheries with important concerns for gear-habitat interactions. If information specific to the unit of certification area is available, generic evidence based on similar fishery situations may not be necessary.</i>	☒
EVIDENCE: While other fish species may occasionally be caught in salmon fisheries including lingcod, various rockfish species and dogfish, the most probable adverse impacts to species associated with Alaska commercial salmon fisheries involve catch of non-target salmon stocks, which are reported to the State through the Fish Tickets or eLandings reporting systems.²⁵¹ Individual fish ticket information, Commercial Operator's Annual Report (COAR) data, customized processor and buyer listings and historical catch and production is available upon request from ADF&G.²⁵² Interactions between Alaska's commercial salmon fisheries with marine mammals and birds have been recorded by NOAA's Alaska Marine Mammal Observer Program,²⁵³ which has published a series of reports documenting relatively rare mortalities and injuries from net entanglements. These reports have also identified factors that appear to increase or decrease such interactions, and are readily available online.²⁵⁴	
Current status/Appropriateness/Effectiveness: <i>There is evidence that the fishery management organization considers the most probable adverse impacts of the fishery under assessment on main associated species (e.g. recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) are 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 arise, effective remedial action is taken. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored.</i>	☒
EVIDENCE: The health of (non-target) Alaskan salmon stocks, which are the most probable species to be impacted incidentally by commercial salmon fisheries, are monitored through surveys of adult escapement. ADFG uses aerial surveys, tower counts, sonar counts, and mark-recapture studies to collect escapement data, and adjusts harvest efforts to protect stocks of concern. Importantly, escapement must be sufficient to support sustained yield, as mandated by Alaska's Policy for the Management of Sustainable Salmon	

²⁵¹ http://www.adfg.alaska.gov/static/license/fishing/pdfs/salmon_troll_elanding_bycatch_2016.pdf,
https://www.adfg.alaska.gov/static/license/fishing/pdfs/elanding_codes.pdf

²⁵² <https://www.adfg.alaska.gov/index.cfm?adfg=fishlicense.requests>

²⁵³ <https://www.fisheries.noaa.gov/alaska/fisheries-observers/alaska-marine-mammal-observer-program>

²⁵⁴ <https://www.fisheries.noaa.gov/resource/document/incidental-takes-and-interactions-marine-mammals-and-birds-districts-6-7-and-8>,
<https://www.fisheries.noaa.gov/resource/document/incidental-takes-and-interactions-marine-mammals-and-birds-districts-6-7-and-8>,
<https://www.fisheries.noaa.gov/resource/document/incidental-take-and-interactions-marine-mammals-and-birds-kodiak-island-salmon>,
<https://www.fisheries.noaa.gov/resource/document/incidental-catch-and-interactions-marine-mammals-and-birds-cook-inlet-salmon>

12.2.1. The fishery management organization shall consider the most probable adverse impacts of the unit of certification on main associated species (Appendix 1, Part 3 and 7), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) shall be monitored and shall 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 arise, effective remedial action shall be taken.

Fisheries (MSSF), which states that, "Management of salmon fisheries by the State of Alaska should be based on the following principles and criteria:

1. Wild salmon stocks and their habitats should be maintained at levels of resource productivity that assure sustained yields.
2. Fisheries shall be managed to allow escapements within ranges necessary to conserve and sustain potential salmon production and maintain normal ecosystem functioning.
3. Effective salmon management systems should be established and applied to regulate human activities that affect salmon.
4. Public support and involvement for sustained use and protection of salmon resources shall be sought and encouraged.
5. In the face of uncertainty, salmon stocks, fisheries, artificial propagation and essential habitats shall be managed conservatively."

The Policy for MSSF directs ADF&G to report to the Alaska Board of Fisheries on the status of salmon stocks and identify those that are of yield, management or conservation concern.²⁵⁵

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization considers the most probable adverse impacts of the unit of certification on main associated species, by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) are monitored and do not threaten these nontarget species with serious risk of extinction, recruitment overfishing, or other impacts that are likely to be irreversible or very slowly reversible. If such impacts arise, effective remedial action is taken. Examples may include various stock and ecosystems assessment reports.



EVIDENCE:

Impacts to non-target salmon species are recorded through Fish Tickets (troll fisheries), eLandings, NOAA Fishery Observer Program reports, all either available online or by request, as described above.

References: See citations in evidence

Numerical score:	Starting score	-	(	Number of EPs NOT met	x	3	)	=	Overall score
	10			0					10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)									High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)									Full Conformance
Non-conformance Number (if applicable):									

²⁵⁵ <https://www.adfg.alaska.gov/index.cfm?adfg=specialstatus.akfishstocks>

9.5.1.4 Supporting Clause 12.2.2.

12.2.2.	The fishery management organization shall consider the most probable adverse impacts of the unit of certification on minor associated species (Appendix 1, Part 3 and 7), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) shall be monitored and shall 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 arise, effective remedial action shall be taken.
Relevance:	Relevant
Evaluation Parameters	Met?
Process: <i>There is a process that accounts for the most probable adverse impacts of the unit of certification on minor associated species. This may take the form of an immediate management response or a further analysis of the identified risk. In the absence of specific information on such impacts of fishing for the unit of certification, generic evidence based on similar fishery situations can be used for fisheries with low risk of severe adverse impact. However, the greater the risk the more specific evidence shall be necessary to ascertain the adequacy of mitigation measures. If information has been utilized from generic evidence based on similar fishery situations (proxies), then, based on the risk of severe adverse impact, the information shall be of higher precision for higher risk. For example, any of the following elements can be considered high risk for a fishery: keystone species, species with relative low growth rates or high catchability, fisheries with significant ETP or bycatch of non-target fishery resources (or non-target stocks, species, harvests, or discards), or fisheries with important concerns for gear–habitat interactions. If information specific to the unit of certification area is available, generic evidence based on similar fishery situations may not be necessary.</i>	☒
EVIDENCE: As for major associated species (see SC 12.2.1), all catch of minor salmon species in Alaska commercial salmon fisheries are recorded through eLandings and FishTickets. According to the Alaska salmon Fisheries Management Plan, developed by the North Pacific Management Council, NMFS and ADF&G, bycatch of non-target species in Alaska salmon fisheries is negligible. This regulatory document states that “Chinook salmon fisheries in Alaska have some bycatch associated with them. Generally, the numbers of other species taken during directed Chinook fishing is small and not considered a conservation issue. The most important bycatch issue in the commercial and recreational hook-and-line fisheries is the capture of undersized Chinook salmon that must be released.” Allowance of groundfish bycatch in troll fisheries is regulated through annual Management Plans.²⁵⁶	
Current status/Appropriateness/Effectiveness: <i>There is evidence that the fishery management organization considers the most probable adverse impacts of the fishery under assessment on minor associated species, by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) are 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 arise, effective remedial action is taken. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored.</i>	☒
EVIDENCE: As for Supporting Clause 12.2.1, see above.	
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization considers the most probable adverse impacts of the unit of certification on minor associated species, by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence</i>	☒

²⁵⁶ https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareasoutheast.salmon_managementplans

12.2.2. The fishery management organization shall consider the most probable adverse impacts of the unit of certification on minor associated species (Appendix 1, Part 3 and 7), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) shall be monitored and shall 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 arise, effective remedial action shall be taken.

available and local knowledge. Accordingly, these catches (including discards) are monitored and do not threaten these non-target stocks with serious risk of extinction, recruitment overfishing, or other impacts that are likely to be irreversible or very slowly reversible. If such impacts arise, effective remedial action is taken. Examples may include various stock and ecosystems assessment reports.

EVIDENCE:

Allowable harvest of bycatch in all commercial salmon fisheries is regulated by limits, season, species, region and gear as described in annual fishery management plans²⁵⁷ and regulations²⁵⁸. See additional evidence cited in SC 12.2.1, above. Bycatch data recorded through eLandings and FishTickets are available from ADFG by request.²⁵⁹

References: See citations in evidence

Numerical score:	Starting score	Number of EPs <u>NOT</u> met		Overall score
	10	0	x 3	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)				High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)				Full Conformance
Non-conformance Number (if applicable):				--

9.5.1.5 Supporting Clause 12.2.3.

12.2.3. There shall be outcome indicator(s) consistent with achieving management objectives for non-target species (i.e., avoiding overfishing and other impacts that are likely to be irreversible or very slowly reversible).

Relevance: Relevant

Evaluation Parameters	Met?
Process: <i>There is a process to set outcome indicator(s) consistent with achieving management objectives for non-target species (i.e., avoiding overfishing and other impacts that are likely to be irreversible or very slowly reversible).</i>	☒

EVIDENCE:

Although primarily focused on management of salmon fisheries in Federal waters, the Fishery Management Plan for Salmon Fisheries in the EEZ off Alaska²⁶⁰ states that, "A combination of factors work together to keep both the number of fish taken as bycatch and the associated mortality of those fish at a negligible amount. First, ADF&G fish tickets serve as a standardized reporting method documenting all retained harvest from both state and EEZ waters. ADF&G regulations require that fish tickets record the type of gear used as well as the number, pounds, delivery condition, and disposition of fish species harvested and retained for both commercial and personal use (5 AAC 39.130(c)). Maximum retainable allowances (MRAs) of certain non-salmon allow for bycatch to be treated as incidental catch so that those species are able to be utilized. In addition, non-retention requirements when MRAs are achieved create incentives to avoid those species taken as bycatch. Specified closure areas during those times of the year when bycatch is generally highest serves to significantly reduce the amount of bycatch taken."

²⁵⁷ https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareasoutheast.salmon_managementplans

²⁵⁸ <https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareapws.salmon#management>

²⁵⁹ <https://www.adfg.alaska.gov/index.cfm?adfg=fishlicense.requests>

²⁶⁰ <https://www.npfmc.org/wp-content/PDFdocuments/fmp/Salmon/SalmonFMP.pdf>

12.2.3. There shall be outcome indicator(s) consistent with achieving management objectives for non-target species (i.e., avoiding overfishing and other impacts that are likely to be irreversible or very slowly reversible).

This document reiterates ADFG's approach to track incidental catch of non-target species through FishTickets and eLandings records, which it evaluates against allowable catch, as identified through regulations. ADFG adjusts regulations, as necessary, to redirect fishing effort or gear types to reduce bycatch of these non-target species, and evaluates effectiveness of management actions through monitoring of adult escapement (in context of escapement goals).

Current status/Appropriateness/Effectiveness:

There is evidence that outcome indicator(s) consistent with achieving management objectives for non-target species (i.e., avoiding overfishing and other impacts that are likely to be irreversible or very slowly reversible) have been achieved. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored.


EVIDENCE:

Management plans for Alaska's commercial salmon fisheries include goals and measures to minimize incidental take of non-target species, particularly salmon stocks of concern. For example, the 2019 Southeast Alaska Drift Gillnet Fishery Management Plan²⁶¹ states,

"The [Pacific Salmon Treaty] PST requires the harvest of natural stocks of chum salmon returning to Portland Canal streams be minimized to ensure adequate escapement of these stocks. As a result, no fishing should be expected in Section 1-A for Portland Canal chum salmon."

"Management goals for the District 6 and District 8 drift gillnet fisheries for the 2019 season are as follows:

1. Achieve Chinook salmon escapement goals;
2. Achieve the Stikine River sockeye salmon escapement goals while harvesting the Alaska share of Stikine River sockeye salmon;
3. Achieve sustainable spawning escapements of sockeye salmon in local Alaska systems;
4. Achieve pink salmon spawning escapement objectives in Districts 6 and 8;
5. Manage the District 6 and District 8 drift gillnet fisheries consistent with the provisions of the PST;
6. Manage the directed Stikine River Chinook salmon drift gillnet fishery in accordance to the District 8 King Salmon Management Plan (5 AAC 33.368) and associated closed water regulations (5 AAC 33.350 (i)(3-9))."

Commercial salmon management plans for other regions and gear types include similar escapement and conservation goals associated with incidental catch of non-target species. Escapement goals and estimates of escapement, the latter serving as an outcome indicator, are regularly reported and periodically summarized by ADFG²⁶².

As recent example of responsiveness to underperformance of several Chinook salmon stocks of concern (relative to escapement goals), ADFG implemented new regulations in 2019 to reduce incidental catch of these stocks, closing multiple areas to commercial troll, purse seine and gillnet fisheries.²⁶³

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are effective outcome indicator(s) consistent with achieving management objectives for non-target species (i.e., avoiding overfishing and other impacts that are likely to be irreversible or very slowly reversible). Examples may include fishery management reports, and stock or ecosystems assessment reports.


EVIDENCE:

Wild escapement of adult salmon, particularly for stocks of concern, represents an appropriate outcome indicator for management actions aimed to minimize impacts from Alaska's commercial salmon fisheries on the most vulnerable non-target species and stocks. Escapement goals are published by ADFG,²⁶⁴ and fishery management plans outline goals and regulations to minimize incidental catch of non-target species and stocks. These management plans are produced and published online annually by ADFG for

²⁶¹ <https://www.adfg.alaska.gov/FedAidPDFs/RIR.1J.2019.03.pdf>

²⁶² <https://www.adfg.alaska.gov/FedAidPDFs/FMS18-04.pdf>

²⁶³ <https://www.adfg.alaska.gov/static/applications/dfnewsrelease/1020850172.pdf>

²⁶⁴ <https://www.adfg.alaska.gov/FedAidPDFs/FMS18-04.pdf>

12.2.3.	There shall be outcome indicator(s) consistent with achieving management objectives for non-target species (i.e., avoiding overfishing and other impacts that are likely to be irreversible or very slowly reversible).															
commercial salmon fisheries in the Westward, ²⁶⁵ Southeast, ²⁶⁶ Central, ²⁶⁷ and Arctic-Yukon-Kuskokwim ²⁶⁸ regions. ADFG also publishes bycatch limits for groundfish ²⁶⁹ and lingcod ²⁷⁰ taken through Alaska commercial salmon fisheries, and monitors catch of these species through FishTickets and eLandings.																
References:	See citations in evidence															
Numerical score:	Starting score		-		(		Number of EPs <u>NOT</u> met		x 3		)		=		Overall score	
	10						0								10	
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)															High	
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)															Full Conformance	
Non-conformance Number (if applicable):																

9.5.1.6 Supporting Clause 12.2.4.

12.2.4.	The fishery management organization shall consider the most probable adverse impacts of the unit of certification on ETP species (Appendix 1, Part 4 and 7), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge.				
Relevance:	Relevant				
Evaluation Parameters					Met?
Process: <i>There is a process that accounts for the most probable adverse impacts of the unit of certification on ETP species. This may take the form of an immediate management response or a further analysis of the identified risk. In the absence of specific information on such impacts of fishing for the unit of certification, generic evidence based on similar fishery situations (proxies) can be used for fisheries with low risk of severe adverse impact. However, the greater the risk the more specific evidence shall be necessary to ascertain the adequacy of mitigation measures. If information has been utilized from generic evidence based on similar fishery situations, based on the risk of severe adverse impact, the information shall be of higher precision for higher risk. For example, any of the following elements can be considered high risk for a fishery: keystone species, species with relative low growth rates or high catchability, fisheries with significant ETP or bycatch of non-target fishery resources (or non-target stocks, species, harvests, or discards), or fisheries with important concerns for gear-habitat interactions. If information specific to the unit of certification area is available, generic evidence based on similar fishery situations may not be necessary.</i>					☒
EVIDENCE: The State of Alaska, Department of Fish and Game (ADFG) is responsible for determining and maintaining a list of endangered species in Alaska under AS 16.20.190. A species or subspecies of fish or wildlife is considered endangered when the Commissioner of ADFG determines that its numbers have decreased to such an extent as to indicate that its continued existence is threatened. The State Endangered Species List currently includes two birds (short-tailed albatross and eskimo curlew) and three marine mammals (blue whale, humpback whale, and right whale). Additionally, two federal agencies, the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS), are responsible for maintaining lists of species that meet the definition of threatened or endangered under the U.S. Endangered Species Act of 1973. ²⁷¹ NMFS is responsible for maintaining the list for most marine species					

²⁶⁵ <https://www.adfg.alaska.gov/index.cfm?adfg=fishingcommercialbyarea.southwest>

²⁶⁶ https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareasoutheast.salmon_managementplans

²⁶⁷ https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareasoutheast.salmon_managementplans

²⁶⁸ <https://www.adfg.alaska.gov/index.cfm?adfg=fishingcommercialbyarea.interior>

²⁶⁹ <https://www.adfg.alaska.gov/static-f/applications/dcfnewsrelease/1131363858.pdf>

²⁷⁰ <https://www.adfg.alaska.gov/static-f/applications/dcfnewsrelease/1131293727.pdf>

²⁷¹ <https://www.fisheries.noaa.gov/topic/laws-policies#endangered-species-act>

12.2.4. The fishery management organization shall consider the most probable adverse impacts of the unit of certification on ETP species (Appendix 1, Part 4 and 7), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge.

and managing those species once they are listed. The U.S. Fish and Wildlife Service (USFWS) is responsible for maintaining the list for terrestrial and freshwater species, as well as three marine mammal species (polar bear, Pacific walrus, and sea otter), and for managing those species once they are listed. NMFS and USFWS must determine if any species is endangered because of any of the following factors:

- § The present or threatened destruction, modification, or curtailment of its habitat of range;
- § Overutilization for commercial, recreational, scientific, or educational purposes;
- § Disease or predation;
- § The inadequacy of existing regulatory mechanisms; or
- § Other natural or manmade factors affecting its continued existence.

Serious fisheries interactions with marine mammals (including ETP species) must be reported to NOAA Fisheries in accordance with the Marine Mammal Protection Act.²⁷² The USFWS tracks the status and identifies threats to listed seabirds.²⁷³

Net entanglements associated with Alaska's commercial salmon fisheries represent a potential threat to listed species. However, interactions between commercial salmon fisheries with endangered, threatened or protected marine mammal species are generally rare in Alaska, as evidenced through entanglement reports²⁷⁴ and stock assessments.²⁷⁵ Entanglements with listed seabirds are also rare in salmon fisheries, according to accounts provided at a December 11, 2019 workshop held in Anchorage, Alaska, that involved commercial salmon fishermen, state and federal biologists, seabird advocacy representatives and this Assessment Team. Commercial salmon fisheries are not mentioned among primary threats to Steller's eider,²⁷⁶ spectacled eider,²⁷⁷ short-tailed albatross²⁷⁸ or eskimo curlew.²⁷⁹ Nevertheless, NOAA Fisheries does provide guidance to reduce seabird bycatch for other fisheries that may impact these species,²⁸⁰ and continues to pursue technologies that show promise to reduce seabird bycatch.²⁸¹

Current status/Appropriateness/Effectiveness:

There is evidence that the fishery management organization considers the most probable adverse impacts of the fishery under assessment on ETP species (e.g. negatively impacting rebuilding efforts), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these impacts are monitored and do not impede, slow, or reduce likelihood of recovery of the species to target levels (or other planned outcomes). If such impacts arise, effective remedial actions are taken.



EVIDENCE:

In accordance with the Marine Mammal Protection Act (MMPA), serious fisheries interactions with marine mammals,²⁸² including ETP species, must be recorded and reported to NOAA Fisheries, which regularly prepares and publishes stock assessment reports for marine mammals²⁸².²⁸³ From these reports, no impacts from Alaska's commercial salmon fisheries to blue whales have been reported. But in 2012 and 2015, one humpback whale was killed and another injured in Kodiak Island salmon purse seine and gillnet fisheries, respectively. Based on these reports and other information, NOAA Fisheries classifies Alaska's commercial salmon and other fisheries with respect to impact on marine mammals to determine whether a "take reduction plan" is required under the MMPA. Three categories are recognized:

²⁷² <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-protection-act>

²⁷³ <https://www.fws.gov/alaska/pages/endangered-species>

²⁷⁴ https://seagrant.oregonstate.edu/sites/seagrant.oregonstate.edu/files/wcr_2018_entanglement_report_508.pdf

²⁷⁵ <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-region>

²⁷⁶ <https://www.fws.gov/alaska/pages/endangered-species/stellers-eider>

²⁷⁷ <https://www.fws.gov/alaska/pages/endangered-species/spectacled-eider>

²⁷⁸ <https://www.fws.gov/alaska/pages/endangered-species/short-tailed-albatross>

²⁷⁹ <https://www.fws.gov/alaska/pages/endangered-species/eskimo-curlew>

²⁸⁰ <https://www.fisheries.noaa.gov/alaska/bycatch/alaska-regulations-seabird-avoidance-and-listed-seabirds>,

<https://www.fisheries.noaa.gov/alaska/bycatch/seabird-avoidance-gear-and-methods>

²⁸¹ <https://www.fisheries.noaa.gov/national/bycatch/bycatch-reduction-engineering-program>

²⁸² <https://www.fisheries.noaa.gov/webdam/download/64668195>

²⁸³ <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-species-stock>

12.2.4. The fishery management organization shall consider the most probable adverse impacts of the unit of certification on ETP species (Appendix 1, Part 4 and 7), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge.

§ Category I: Annual mortality and serious injury of a stock in a given fishery is greater than or equal to 50 percent of the potential biological removal (PBR) level²⁸⁴ (i.e., frequent incidental mortality and serious injury of marine mammals).

§ Category II: Annual mortality and serious injury of a stock in a given fishery is greater than 1 percent and less than 50 percent of the PBR level (i.e., occasional incidental mortality and serious injury of marine mammals).

§ Category III: Annual mortality and serious injury of a stock in a given fishery is less than or equal to 1 percent of the PBR level (i.e., a remote likelihood of or no known incidental mortality and serious injury of marine mammals).

Most Alaskan commercial salmon fisheries are classified as Category III (lowest impact), though many gillnet fisheries are listed as Category II with rare or occasional impacts to sea otters and humpback whales²⁸⁴. Owners of vessels or gear engaging in a Category I or II fishery are required under the MMPA (16 U.S.C. 1387(c)(2)), as described in 50 CFR 229.4, to register with NMFS and obtain a marine mammal authorization to lawfully take non-endangered and non-threatened marine mammals incidental to commercial fishing operations. Owners of vessels or gear engaged in a Category III fishery are not required to register with NMFS or obtain a marine mammal authorization, as they are recognized to experience low incidence of interaction with marine mammal species.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization considers the most probable adverse impacts of the fishery under assessment on ETP species, by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) are monitored and do not threaten these non-target stocks with serious risk of extinction, recruitment overfishing, or other impacts that are likely to be irreversible or very slowly reversible; if such impacts arise, effective remedial action are taken. Examples may include various stock and ecosystems assessment reports.



EVIDENCE:

Marine mammal stock assessments,²⁸⁵ MMPA PBR classifications of U.S. fisheries,²⁸⁶ and the USFWS's Alaska Region Endangered Species Program²⁸⁷ collectively provide substantial evidence documenting the generally low level of impact that Alaska's commercial salmon fisheries have on ETP species. Where negative interactions have occurred, measures have been taken to minimize future impacts.

References: See citations in evidence

Numerical score:	Starting score		Number of EPs <u>NOT</u> met					Overall score	
	10	– (	0	x	3	) =	10		
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)							High		
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)							Full Conformance		
Non-conformance Number (if applicable):									

²⁸⁴ The PBR level is the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population (See section 118 of MMPA).

²⁸⁵ <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-stock-assessment-reports-species-stock>

²⁸⁶ <https://www.federalregister.gov/documents/2019/10/10/2019-22007/list-of-fisheries-for-2020>

²⁸⁷ <https://www.fws.gov/alaska/pages/endangered-species>

9.5.1.7 Supporting Clause 12.2.5.

12.2.5.	There shall be outcome indicator(s) consistent with achieving management objectives seeking to ensure that ETP species are protected from adverse impacts resulting from interactions with the unit of certification and any associated enhanced fishery activity, including recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible.
Relevance:	Relevant
Evaluation Parameters	Met?
Process: <i>There is a process in place that allowing creation of effective outcome indicators seeking to ensure that ETP species are protected from adverse impacts resulting from interactions with the unit of certification and any associated enhanced fishery activity, including recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible.</i>	☑
EVIDENCE: NOAA Fisheries set limits for allowable incidental take of marine mammals, and requires that all Category I and II fisheries (see Supporting Clause 12.2.4) report serious interactions with marine mammals. In general, the MMPA prohibits killing or injuring marine mammals except under certain circumstances. For example, it provides an annual exemption for accidentally killing or injuring marine mammals—referred to as incidental take—during commercial fishing operations. However, this exemption does not include marine mammal stocks listed as endangered or threatened under the ESA. To address incidental take of ETP and other marine mammal species, NOAA Fisheries has developed Take Reduction Plans and Teams to develop goals and means to reduce impacts from fisheries.²⁸⁸ With respect to ETP bird species in Alaskan waters, the Steller’s eider is found only in Southwest Alaska (Yukon, Kuskokwim, Alaska Peninsula and Bristol Bay areas); spectacled eiders are found in the central Bering Sea, south of St. Lawrence Island, where they remain until March or April, then migrate to Norton Sound during molting period; and short-tailed albatross are found throughout offshore areas of the Bering Sea and Gulf of Alaska and occasionally in waters of the Alaska Peninsula, and Kodiak Island. Assessments based on available data do not indicate frequent encounters with or associated mortality from Alaska’s commercial salmon fisheries. Accordingly, the USFWS does not require any Alaska salmon fishery to maintain incidental take permits for these species, nor do the recovery plans require or recommend any mitigating actions by salmon fisheries where these seabirds occur.	
Current status/Appropriateness/Effectiveness: <i>There is evidence for established outcome indicators (e.g., in a fishery management plan or other regulation) seeking to ensure that ETP species are protected (through States or international regulations) from adverse impacts resulting from interactions with the unit of certification and any associated enhanced fishery activity, including recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored. Overall, fishing activity does not impede, slow, or reduce likelihood of recovery of the species to target levels or other planned outcomes. Management objectives shall be achieved accordingly. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored.</i>	☑
EVIDENCE: See above and Supporting Clause 12.2.4	
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are effective outcome indicators seeking to ensure that ETP species are protected from adverse impacts resulting from interactions with the unit of certification and any associated enhanced fishery activity, including recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible. Examples may include fishery management plans, or stock and ecosystems assessment reports.</i>	☑
EVIDENCE:	

²⁸⁸ <https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-take-reduction-plans-and-teams>

12.2.5. There shall be outcome indicator(s) consistent with achieving management objectives seeking to ensure that ETP species are protected from adverse impacts resulting from interactions with the unit of certification and any associated enhanced fishery activity, including recruitment overfishing or other impacts that are likely to be irreversible or very slowly reversible.

See above and Supporting Clause 12.2.4.

References: See citations in evidence

Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10

Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)

High

Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)

Full Conformance

Non-conformance Number (if applicable):

9.5.1.8 Supporting Clause 12.2.6.

12.2.6. The fishery management organization shall consider the most probable adverse impacts of the unit of certification on habitats (Appendix 1, Part 5 and 7), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge.

Relevance: Relevant

Evaluation Parameters

Met?

Process:

There is a process that accounts for the most probable adverse impacts of the unit of certification on habitats. This may take the form of an immediate management response or a further analysis of the identified risk. In the absence of specific information on such impacts of fishing for the unit of certification, generic evidence based on similar fishery situations can be used for fisheries with low risk of severe adverse impact. However, the greater the risk the more specific evidence shall be necessary to ascertain the adequacy of mitigation measures. If information has been utilized from generic evidence based on similar fishery situations, based on the risk of severe adverse impact, the information shall be of higher precision for higher risk. For example, any of the following elements can be considered high risk for a fishery: keystone species, species with relative low growth rates or high catchability, fisheries with significant ETP species or bycatch of non-target fishery resources (or non-target stocks, species, harvests, or discards), or fisheries with important concerns for gear-habitat interactions. If information specific to the unit of certification area is available, generic evidence based on similar fishery situations may not be necessary.



EVIDENCE:

Alaska's Policy for Management of Sustainable Salmon Fisheries²⁸⁹ states that "all essential salmon habitat in marine, estuarine, and freshwater ecosystems and access of salmon to these habitats should be protected; essential habitats include spawning and incubation areas, freshwater rearing areas, estuarine and nearshore rearing areas, offshore rearing areas, and migratory pathways". In general, gear and methods used in Alaska's commercial salmon fisheries have little or no impact on salmon habitat, as fishing gear typically do not come in contact with substrate and are frequently removed from the water column in accordance with the regulated timing of fisheries and environmental conditions (i.e. tides).

Current status/Appropriateness/Effectiveness:

There is evidence that the fishery management organization considers the most probable adverse impacts of the unit of certification on habitats, by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, if these impacts are likely to be irreversible or very slowly reversible, effective remedial action is taken (please see Appendix 1 part 5, noting specifically the 3 habitat



²⁸⁹ <http://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2016-2017/jointcommittee/5aac39.pdf>

12.2.6. The fishery management organization shall consider the most probable adverse impacts of the unit of certification on habitats (Appendix 1, Part 5 and 7), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge.

assessment elements, and part 7 for cumulative effects evaluation). Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored.

EVIDENCE:

Given the low impact posed by commercial salmon fisheries to sensitive, benthic habitat (as salmon fishing gear typically does not come into contact with the seafloor), habitat impact monitoring and mitigation measures are generally not relevant to Alaska's commercial salmon fisheries.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization considers the most probable adverse impacts of the unit of certification on habitats, by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) are 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 arise, effective remedial action is taken. Examples may include various stock and ecosystems assessment reports.



EVIDENCE:

Citing the Fishery Management Plan for Salmon Fisheries in the EEZ off Alaska, "No evidence suggests salmon troll, drift gillnet, or purse seine gear impacts habitat.²⁹⁰ The activity targets only adult salmon in the water column, successfully avoiding any significant disturbance of the benthos, substrate, or intertidal habitat. The EEZ salmon fisheries do not occur in any areas designated as Habitat Areas of Particular Concern."

References: See citations in evidence

Numerical score:	Starting score	Number of EPs <u>NOT</u> met			Overall score	
	10	-	(	0 x 3)	=	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)						High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)						Full Conformance
Non-conformance Number (if applicable):						

9.5.1.9 Supporting Clause 12.2.7.

12.2.7. There shall be knowledge of the essential habitats for the *stock under consideration* and potential fishery impacts on them. Impacts on essential habitats, and on habitats that are highly vulnerable to damage by the fishing gear involved, shall be avoided, minimized, or mitigated. In assessing fishery impacts, the full spatial range of the relevant habitat shall be considered, not just the part of the spatial range that is potentially affected by fishing.

Relevance: Relevant

Evaluation Parameters	Met?
Process: <i>There is a mechanism in place by which the potential impacts of the fishery upon habitats essential to the stock under consideration and on habitats that are highly vulnerable to damage are identified. This or a similar mechanism shall also be in place to identify habitats that are highly vulnerable to fishery activities by the unit of certification. The information provided by these mechanisms shall be used to produce specific management objectives related to avoiding significant adverse impacts on habitats. The knowledge of the habitats in question can therefore include relevant traditional, fisher,</i>	☒

²⁹⁰ <https://www.fisheries.noaa.gov/management-plan/alaska-salmon-fisheries-management-plan>

12.2.7. There shall be knowledge of the essential habitats for the stock under consideration and potential fishery impacts on them. Impacts on essential habitats, and on habitats that are highly vulnerable to damage by the fishing gear involved, shall be avoided, minimized, or mitigated. In assessing fishery impacts, the full spatial range of the relevant habitat shall be considered, not just the part of the spatial range that is potentially affected by fishing.

or community knowledge, provided its validity can be objectively verified (i.e., the knowledge has been collected and analysed through a systematic, objective, and well-designed process, and is not just hearsay). When identifying highly vulnerable habitats, their value to ETP species shall be considered, with habitats essential to ETP species being categorized accordingly.

EVIDENCE:

Essential fish habitats (EFHs) for salmon in Alaska's marine and intertidal waters have been designated and are identified in the Fishery Management Plan (FMP) for Salmon Fisheries in the EEZ off Alaska.²⁹¹ ADFG maintains a Catalog of Waters Important for the Spawning, Rearing or Migration of Anadromous Fishes,²⁹² that includes freshwater habitats that are essential to the persistence of various salmon species targeted by the commercial fisheries. According to the FMP, there is "no evidence suggests salmon troll, drift gillnet, or purse seine gear impacts habitat. The activity targets only adult salmon in the water column, successfully avoiding any significant disturbance of the benthos, substrate, or intertidal habitat." And while commercial salmon fisheries are generally excluded from freshwater habitats, in many cases, hatcheries that enhance harvest by these fisheries do occur along freshwater habitats. Appropriately, construction and continued operation of salmon hatcheries in Alaska involves a strict approval and permitting process,²⁹³ administrated by ADFG, that explicitly considers and aims to limit hatchery impacts to surrounding habitats.

Current status/Appropriateness/Effectiveness:

Successful management measures have been developed and are in place to achieve the objectives described in the process parameter.



EVIDENCE:

Approved gear used in Alaska commercial salmon fisheries has little-to-no impact on essential habitats, and hatcheries that enhance these fisheries are subject to a strict permitting process administrated by ADFG that considers and mitigates potential habitat impacts. These approaches appear to be appropriate and effective at limiting significant habitat impacts from Alaska's commercial salmon fisheries.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there is knowledge of the essential habitats for the stock under consideration and potential fishery impacts on them. Impacts on essential habitats and on habitats that are highly vulnerable to damage by the fishing gear involved are avoided, minimized, or mitigated. In assessing fishery impacts, the full spatial range of the relevant habitat is considered, not just the part of the spatial range that is potentially affected by fishing. Examples may include various regulations, data, and reports.



EVIDENCE:

NOAA Fisheries has clearly defined Essential Fish Habitat for salmon in Alaska's marine and estuarine environments,²⁹⁴ and ADFG maintains a catalog of freshwater habitats used by anadromous fishes.²⁹⁵ These resources are used by state and federal managers to limit and prevent serious impacts to salmon habitat in Alaska, all in accordance mandates specified in Alaska's Policy for the Management of Sustainable Salmon Fisheries. See above and in Supporting Clause 12.2.6 for references to additional evidence.

References:

See citations in evidence

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)									High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)									Full Conformance

²⁹¹ <https://www.fisheries.noaa.gov/management-plan/alaska-salmon-fisheries-management-plan>

²⁹² <https://www.adfg.alaska.gov/sf/SARR/AWC/index.cfm?ADFG=main.home>

²⁹³ <https://www.adfg.alaska.gov/index.cfm?adfg=hatcheries.hatchery>

²⁹⁴ <https://www.fisheries.noaa.gov/alaska/habitat-conservation/essential-fish-habitat-efh-alaska>

²⁹⁵ <https://www.adfg.alaska.gov/sf/SARR/AWC/>

12.2.7. There shall be knowledge of the essential habitats for the *stock under consideration* and potential fishery impacts on them. Impacts on essential habitats, and on habitats that are highly vulnerable to damage by the fishing gear involved, shall be avoided, minimized, or mitigated. In assessing fishery impacts, the full spatial range of the relevant habitat shall be considered, not just the part of the spatial range that is potentially affected by fishing.

Non-conformance Number (if applicable):

9.5.1.10 Supporting Clause 12.2.8.

12.2.8. There shall be outcome indicator(s) consistent with achieving management objectives for avoiding, minimizing, or mitigating the impacts of the unit of certification on essential habitats for the *stock under consideration* and on habitats that are highly vulnerable to damage by the fishing gear of the unit of certification.

Relevance: Relevant

Evaluation Parameters	Met?

Process:

There is a mechanism in place that allows the establishment of outcome indicator(s) consistent with achieving management objectives for avoiding, minimizing, or mitigating impacts on essential habitats for the stock under consideration and on habitats that are highly vulnerable to damage by the fishing gear of the unit of certification.



EVIDENCE:

See Supporting Clauses 12.2.6, 12.2.7 and evidence cited therein.

Current status/Appropriateness/Effectiveness:

Successful outcome indicators and management measures have been developed and are in place to achieve the objectives described in the process parameter.



EVIDENCE:

See Supporting Clauses 12.2.6, 12.2.7 and evidence cited therein.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are effective outcome indicator(s) consistent with achieving management objectives for avoiding, minimizing, or mitigating impacts on essential habitats for the stock under consideration and on habitats that are highly vulnerable to damage by the fishing gear of the unit of certification. Examples may include various regulations, data, and reports.



EVIDENCE:

See Supporting Clauses 12.2.6, 12.2.7 and evidence cited therein.

References: See citations in evidence

Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10								

Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)

High

Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)

Full Conformance

Non-conformance Number (if applicable):

9.5.1.11 Supporting Clause 12.2.9.

12.2.9.	The fishery management organization shall consider the most probable adverse impacts of the fishery under assessment on the ecosystem (Appendix 1, Part 6), by assessing and, where appropriate, addressing and or/correcting them, taking into account available scientific information and local knowledge.		
Relevance:	Relevant		
Evaluation Parameters			
Process:			
<i>There is a process that accounts for the most probable adverse impacts of the unit of certification on the ecosystem. This may take the form of an immediate management response or a further analysis of the identified risk. In the absence of specific information on the ecosystem impacts of fishing for the unit of certification, generic evidence based on similar fishery situations (proxies) can be used for fisheries with low risk of severe adverse impact. However, the greater the risk the more specific evidence shall be necessary to ascertain the adequacy of mitigation measures. If information has been utilized from generic evidence based on similar fishery situations, then, based on the risk of severe adverse impact, the information shall be of higher precision for higher risk. For example, any of the following elements can be considered high risk for a fishery: keystone species, species with relative low growth rates or high catchability, fisheries with significant ETP species or bycatch of non-target fishery resources (or non-target stocks, species, harvests, or discards), or fisheries with important concerns for gear–habitat interactions. If information specific to the unit of certification area is available, generic evidence based on similar fishery situations may not be necessary.</i>			
EVIDENCE:			
Alaska’s Policy for the Management of Sustainable Salmon Fisheries directs that, “the role of salmon in ecosystem functioning should be evaluated and considered in harvest management decisions and setting of salmon escapement goals”.²⁹⁶ In accordance with this policy, ADFG establishes escapement goals for major salmon populations throughout their spawning distribution, and monitors actual escapement through aerial surveys, sonar-based counts and other methodologies.²⁹⁷ Alaska’s commercial salmon fisheries are enhanced through the production of hatchery fish.²⁹⁸ Hatchery Permits are required for the construction and/or operation of a private nonprofit (PNP) salmon hatchery in Alaska. Hatchery permits specify the species and number of salmon than can be incubated at the hatchery, as well as the number released, release sites, broodstock sources, and other conditions of operation. ADFG considers requests for increased hatchery production by asking if an increase can be managed with consideration of potential risks to wild stocks, and ADFG administrates and conducts research to address such uncertainties.²⁹⁹ At the federal level, NOAA Fisheries conducts research to aid state and federal fishery managers in making informed science-based decisions to help sustain fish populations, fisheries, and fishing communities in accordance with the NOAA's Alaska Fisheries Science Center's Science Plan and the NOAA Annual Guidance Memo. NOAA marine ecosystem monitoring is conducted in several regions, including the Eastern Bering Sea, the Gulf of Alaska, the Arctic and Aleutian Islands. Their research findings contribute to the Alaska Marine Ecosystem Status report,³⁰⁰ which summarizes and synthesizes historical and possible future effects of climate and fishing on large marine ecosystems.			
Current status/Appropriateness/Effectiveness:			
<i>There is evidence that the fishery management organization considers the most probable adverse impacts of the fishery under assessment on the ecosystem (e.g. food-webs effects), by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these impacts are likely to be irreversible or very slowly reversible; or effective remedial action shall be taken. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored. There are policies in place (e.g., harvest control rules) that are effective at protecting ecosystem functioning and accounting for species’</i>			

²⁹⁶ <http://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2016-2017/jointcommittee/5aac39.pdf>

²⁹⁷ <http://www.adfg.alaska.gov/FedAidPDFs/FMS18-04.pdf>

²⁹⁸ https://www.adfg.alaska.gov/static-fishing/PDFs/hatcheries/2013_ak_hatcheries.pdf

²⁹⁹ <https://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesResearch.main>

³⁰⁰ <https://www.fisheries.noaa.gov/resource/data/alaska-marine-ecosystem-status-reports-archive>

12.2.9. The fishery management organization shall consider the most probable adverse impacts of the fishery under assessment on the ecosystem (Appendix 1, Part 6), by assessing and, where appropriate, addressing and or/correcting them, taking into account available scientific information and local knowledge.

ecological role, and precautionary and effective spatial management is used (e.g., to protect spawning areas, prevent localized depletion, and protect important foraging areas for predators of fished species) if applicable.

EVIDENCE:

ADFG evaluates the effects of Alaska's commercial salmon fisheries and associated enhancement activities on ecosystem function in several ways. First and foremost, surveys are conducted regularly to monitor the escapement of naturally spawning salmon populations. Where escapement goals are chronically not met, salmon stocks are recognized to be of concern and are protected by the State.³⁰¹ Potential for sockeye salmon productivity in westward region lakes, including those of Kodiak and Afognak islands, is monitored by ADFG's Limnology Laboratory, providing managers with valuable information relevant to harvest, escapement and juvenile carrying capacity. The Kodiak Island Limnology Laboratory also provides water quality and stocking recommendations to salmon hatcheries throughout the state.³⁰² Hatchery production of juvenile salmon is regulated through a permitting process administrated by ADFG, which also conducts research to evaluate potential ecological and genetic impacts from stray hatchery salmon on wild populations and associated ecosystems.³⁰³

ADFG has implemented a new Salmon Ocean Ecology Program to support statewide salmon fisheries management through the assessment and monitoring of salmon in the marine environment. The goals of this program are to understand the marine life of Alaskan salmon, use this information to assist fishery management decision-making, and help answer pressing questions about marine processes that influence the abundance and characteristics of our salmon populations.

Current status/Appropriateness/Effectiveness:

The bait used to capture the stock under consideration shall not be formally classified as ETP species (by Alaska or other international designations), and the fishery under consideration does not hinder recovery or rebuilding of overfished species that are not formally classified as ETP species and used as bait.



EVIDENCE:

ADFG and NOAA Fisheries regularly evaluate impacts from Alaska's commercial salmon fisheries on associated species and ecosystems. As described in Supporting Clauses 12.2.1-12.2.3, bycatch in Alaska's commercial salmon fisheries is notably low and rarely involves ETP species. Similarly, bait used in commercial salmon troll fisheries is typically herring or anchovy species, which are not listed as threatened or endangered.

Recently, a number of authors have documented correlations between pink salmon abundance and population trends in other species.³⁰⁴ Several of these studies suggest that pink salmon, a species whose abundance varies drastically between odd and even years, may outcompete other species for prey during years of high abundance and drive trophic cascades across broad ecosystems (Ruggerone et al. 2003, 2005, 2010, 2021, 2023; Ruggerone & Goetz 2004; Ruggerone & Nielsen 2004; Ruggerone & Connors 2015; Batten et. al 2018; Springer et al. 2018; Vosbigan et al. 2024). Fisheries managers in Alaska consider these findings, but also appear to recognize that hatchery produced pink salmon represent a relatively small fraction of the total species' biomass in the North Pacific Ocean and that even strong correlations cannot conclusively establish causality. As stated by Evenson et al. (2018)³⁰⁵ in an ADFG Special Publication, "Although it is possible that hatchery production of salmon could be associated with density-dependent effects, much of the support consists of correlation of some measured effect with salmon numbers or biomass. Generally, the mechanism or connections are posited, but not demonstrated. Given the complexity of the North Pacific Ocean ecosystem and the life history of Pacific salmon, a variety of environmental factors influence salmon growth and productivity, such as prey density, prey distribution, prey quality, inter-and intraspecies interactions (including nonsalmonid fishes, marine mammals, and seabirds), and water temperature.

Ruggerone & Irvine (2018) estimated that in the North Pacific for the period 1990 – 2015, 60% of the Chum Salmon, 15% of pink salmon and 5% of Sockeye Salmon were of hatchery origin. Alaska produced about 68% of the hatchery pink salmon and 18% of

³⁰¹ <https://www.adfg.alaska.gov/index.cfm?adfg=specialstatus.akfishstocks>

³⁰² <https://www.adfg.alaska.gov/index.cfm?adfg=fishinglimnologylab.main>

³⁰³ <https://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesResearch.main>

³⁰⁴ Estes (2014) <https://www.pnas.org/content/111/18/6534>, Springer et al. (2014) <https://www.pnas.org/content/111/18/E1880>, Springer et al. (2018) <https://www.pnas.org/content/115/22/E5038.short>, Ruggerone et al. (2019) <https://www.int-res.com/abstracts/meps/v608/p291-296>

³⁰⁵ <http://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2018-2019/ws/SP18-12.pdf>

12.2.9. The fishery management organization shall consider the most probable adverse impacts of the fishery under assessment on the ecosystem (Appendix 1, Part 6), by assessing and, where appropriate, addressing and or/correcting them, taking into account available scientific information and local knowledge.

hatchery Chum Salmon. Japan produced about 75% of the hatchery Chum Salmon. Therefore, Alaska accounted for just 10% of the combined wild and hatchery total of pink salmon and 11% of Chum Salmon by number. Alaska-produced hatchery-origin salmon comprise an even lower percentage of the salmon total based on biomass (Templin 2024; Americus et al. 2025). Alaska hatchery-origin pink salmon contribute just 2.1% and Chum Salmon contribute 5.3% of the combined total ocean biomass of pink, chum and Sockeye Salmon. Based on these estimates, Templin (2024) concluded that changes in Alaska hatchery production will likely not affect North Pacific-wide marine competition.

It is likely that there is no single cause for observed changes in salmon growth and productivity—including hatchery production. Differentiating relative effects of various contributing factors in the North Pacific Ocean is difficult. This ambiguity is made even more evident when reviewing the body of literature on density-dependent effects. It is not yet clearly demonstrated how and to what extent density-dependent interactions occur among populations of salmon in the North Pacific Ocean, whether they are always present or occur only under specific combinations of events, and whether these interactions are responsible for the observed declines in salmon size and weight. There are also myriad other factors that potentially influence salmon production, from fine scale nearshore environment effects to macro-scale climate change effects.”

Hatchery salmon are a significant component of the marine ecosystem; interact directly or indirectly with many prey, competitor and predator species; and must inevitably have some influence on other ecosystem components. Hatchery pink salmon from Alaska likely exert a marginal effect on the dynamics of the North Pacific marine ecosystem due to their low percentage contribution to total abundance. Large even-odd year differences in pink salmon abundance are driven by wild production. Marginal effects of hatchery pink salmon are dwarfed by normal variation in wild Pink salmon abundance, abundance of other salmon stocks, environmental drivers and other ecosystem elements. While hatchery fish likely contribute to density dependent changes in size at age, and survival, this concern does not rise to a level where ecosystem structure or function has likely been disrupted to a point where there is serious or irreversible harm.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization considers the most probable adverse impacts of the unit of certification on the ecosystem, by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) are monitored and do not threaten these non-target stocks with serious risk of extinction, recruitment overfishing, or other impacts that are likely to be irreversible or very slowly reversible; if such impacts arise, effective remedial action is taken. Examples may include various stock and ecosystems assessment reports.



EVIDENCE:

Ecosystem reports, which include considerations of the condition and abundance of salmon in marine environments, and effects from commercial fisheries, are regularly published by NOAA Fisheries for the Eastern Bering Sea,³⁰⁶ Aleutian Islands,³⁰⁷ Gulf of Alaska³⁰⁸ and Arctic³⁰⁹ regions. ADFG also regularly publishes information regarding the role of salmon, salmon enhancement and effects of commercial fisheries on natural ecosystems.³¹⁰

References:

See citations in evidence

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)									High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)									Full Conformance

³⁰⁶ <https://access.afsc.noaa.gov/REFM/REEM/ecoweb/pdf/2019EBSecosys.pdf>

³⁰⁷ <https://access.afsc.noaa.gov/REFM/REEM/ecoweb/pdf/2018ecosysAI-508.pdf>

³⁰⁸ <https://access.afsc.noaa.gov/REFM/REEM/ecoweb/pdf/2019GOAecosys.pdf>

³⁰⁹ <https://archive.fisheries.noaa.gov/afsc/REFM/Docs/2015/ecosystem.pdf#nameddest=Arctic>

³¹⁰ <https://www.adfg.alaska.gov/index.cfm?adfg=afrb.salmon>

12.2.9. The fishery management organization shall consider the most probable adverse impacts of the fishery under assessment on the ecosystem (Appendix 1, Part 6), by assessing and, where appropriate, addressing and or/correcting them, taking into account available scientific information and local knowledge.

Non-conformance Number (if applicable):

9.5.1.12 Supporting Clause 12.2.10.

12.2.10. There shall be outcome indicator(s) consistent with achieving management objectives seeking to minimize adverse impacts of the unit of certification (including any fishery enhanced activities) on the structure, processes, and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible. Any modifications to the habitat for enhancing the stock under consideration must be reversible and not cause serious or irreversible harm to the natural ecosystem's structure, processes, and function.

Relevance: Relevant

Evaluation Parameters

Met?

Process:

There is a process to allow for drafting effective outcome indicator(s) consistent with achieving management objectives seeking to minimize adverse impacts of the unit of certification (including any fishery enhancement activities) on the structure, processes, and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible. There is also a process that states modifications to the habitat for enhancing the stock under consideration are reversible and do not cause serious or irreversible harm to the natural ecosystem's structure, processes, and function.



EVIDENCE:

Regular ecosystem status reports, developed by NOAA Fisheries, include baseline metrics of ecosystem health in Alaska's marine environments. These reports are published and readily available online.³¹¹

ADFG considers the role of salmon in natural ecosystems, including aquatic environments, and measures trends of abundance through annual estimates of spawner escapement, as directed through Alaska's Policy for the Management of Sustainable Salmon Fisheries.

Through its hatchery research programs³¹² and hatchery permitting process,³¹³ ADFG evaluates and conducts management to limit the effects that fisheries enhancement activities (i.e. hatchery production) has on natural ecosystems. Recent research of hatchery effects on natural ecosystems has investigated rates of straying and genetic introgression from hatchery salmon.³¹⁴ Alaska's Finfish Genetics Policy³¹⁵ establishes that: "Gene flow from hatchery fish straying and intermingling with wild stocks may have significant detrimental effects on wild stocks. First priority will be given to protection of wild stocks from possible harmful interactions with introduced stocks. Stocks cannot be introduced where the introduced stock may have significant interactions or impact on significant or unique wild stocks."

Current status/Appropriateness/Effectiveness:

There is evidence for outcome indicator(s) consistent with achieving management objectives seeking to minimize adverse impacts of the unit of certification (including any fishery enhancement activities) on the structure, processes, and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible. Any modifications to the habitat for enhancing the stock under consideration are reversible and do not cause serious or irreversible harm to the natural ecosystem's structure, processes, and function. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored.



EVIDENCE:

³¹¹ <https://www.fisheries.noaa.gov/resource/data/alaska-marine-ecosystem-status-reports-archive>

³¹² <https://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesResearch.main>

³¹³ <https://www.adfg.alaska.gov/index.cfm?adfg=hatcheries.hatchery>

³¹⁴ https://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesResearch.current_research

³¹⁵ http://www.adfg.alaska.gov/static-f/fishing/PDFs/research/genetics_finfish_policy.pdf

12.2.10. There shall be outcome indicator(s) consistent with achieving management objectives seeking to minimize adverse impacts of the unit of certification (including any fishery enhanced activities) on the structure, processes, and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible. Any modifications to the habitat for enhancing the stock under consideration must be reversible and not cause serious or irreversible harm to the natural ecosystem's structure, processes, and function.

The combined effort by ADFG and NOAA Fisheries to 1) monitor the status of marine ecosystems 2) estimate annual spawner escapement 3) regulate hatchery construction and operation through an annual permitting process and 4) evaluate the potential genetic and ecological impact from stray hatchery fish on natural systems provides substantial evidence that managers have established clear outcome indicators for their management objectives that seek to minimize adverse impacts from commercial salmon fisheries (and associated enhancement) to marine and aquatic ecosystems.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are effective outcome indicator(s) consistent with achieving management objectives seeking to minimize adverse impacts of the unit of certification (including any fishery enhancement activities) on the structure, processes, and function of aquatic ecosystems that are likely to be irreversible or very slowly reversible. Any modifications to the habitat for enhancing the stock under consideration are reversible and do not cause serious or irreversible harm to the natural ecosystem's structure, processes, and function. Examples may include various regulations, data, and reports.



EVIDENCE:

As cited above, marine ecosystem status reports are published regularly by NOAA Fisheries and ADFG regularly reports on salmon escapement estimates, hatchery operations and research investigating interactions between hatchery and wild salmon in Alaska.

References: See citations in evidence

Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)									High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)									Full Conformance
Non-conformance Number (if applicable):									

9.5.1.13 Supporting Clause 12.2.11.

12.2.11. The fishery management organization shall consider the most probable adverse human impacts on the stock/ecosystem under consideration, by assessing and, where appropriate, addressing and or/correcting them, taking into account available scientific information and local knowledge.

Relevance: Relevant

Evaluation Parameters

Met?

Process:

There is a process that accounts for the most probable adverse impacts of the unit of certification on the ecosystem. This may take the form of an immediate management response or a further analysis of the identified risk. In the absence of specific information on the ecosystem impacts of fishing for the unit of certification, generic evidence based on similar fishery situations (proxies) can be used for fisheries with low risk of severe adverse impact. However, the greater the risk the more specific evidence shall be necessary to ascertain the adequacy of mitigation measures.



EVIDENCE:

In Alaska, human impacts on salmon stocks most likely arise through effects from harvest and hatcheries, as salmon habitat in Alaska is by-in-large abundant and pristine.

12.2.11. The fishery management organization shall consider the most probable adverse human impacts on the stock/ecosystem under consideration, by assessing and, where appropriate, addressing and or/correcting them, taking into account available scientific information and local knowledge.

- Alaska's Policy for the Management of Sustainable Salmon Fisheries³¹⁶ accounts for potential impacts from harvest and hatcheries, making the following key statements to direct appropriate monitoring and management (excerpted from 5 AAC 39.222):
- "effects and interactions of introduced or enhanced salmon stocks on wild salmon stocks should be assessed; wild salmon stocks and fisheries on those stocks should be protected from adverse impacts from artificial propagation and enhancement efforts";
- "depleted salmon stocks should be allowed to recover or, where appropriate, should be actively restored; diversity should be maintained to the maximum extent possible, at the genetic, population, species, and ecosystem levels";
- "salmon fisheries shall be managed to allow escapements within ranges necessary to conserve and sustain potential salmon production and maintain normal ecosystem functioning as follows";
- "impacts of fishing, including incidental mortality and other human-induced mortality, should be assessed and considered in harvest management decisions";
- "salmon abundance trends should be monitored and considered in harvest management decisions";

Regular estimates of salmon escapement are published by ADFG³¹⁷ and compared to escapement goals³¹⁸ for each population to 1) identify stocks of concern and 2) adjust harvest regulations as necessary to protect such stocks, all in accordance with overarching policy to manage potential negative effects from overharvest.

Negative effects from hatcheries are managed through ADFG's permitting process for the construction and operation of these facilities. ADFG's salmon hatchery permitting process includes the following:

- an analysis of the possible effects the hatchery would have on fisheries management
- submission of an application providing detailed information on the proposed hatchery
- review of the application by department technical staff
- regional planning team review of the hatchery's compatibility with the regional salmon plan
- a public hearing presenting the plans for the proposed hatchery
- commissioner approval or denial of the hatchery permit

Moreover, Hatchery Permits always carry conditions to protect fish health and wild salmon stocks, such as requiring ADFG approval of broodstock sources and release sites, and inspection of salmon before release. These hatchery permitting requirements are intended to limit negative effects of hatcheries on wild salmon and neighboring hatcheries, and are supported by Alaska Statutes AS16.10.375 – 16.10.480 and 5 AAC 40.005 – 40.990.

Current status/Appropriateness/Effectiveness:

There is evidence that the fishery management organization considers the most probable adverse human impacts of the unit of certification on the ecosystem, by assessing and, where appropriate, addressing and or/correcting them, taking into account available scientific information and local knowledge. Accordingly, these impacts are likely to be irreversible or very slowly reversible; if so, effective remedial action shall be taken. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored.



EVIDENCE:

Spawner surveys and other methods are regularly used to estimate escapement from fisheries in Alaska, and these data are published regularly by ADFG (cited above) to ensure responsible management and protection from overharvest. With respect to potential effects from hatcheries, ADFG maintains a strict planning and permitting process, and recently reviewed the effectiveness of this process to protect wild salmon stocks.³¹⁹

³¹⁶ <https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2016-2017/jointcommittee/5aac39.pdf>

³¹⁷ <https://www.adfg.alaska.gov/FedAidPDFs/FMS18-04.pdf>

³¹⁸ <https://www.adfg.alaska.gov/index.cfm%3Fadfg%3Dsonar.escapementgoals>

³¹⁹ <https://www.adfg.state.ak.us/static/regulations/regprocess/fisheriesboard/pdfs/2018-2019/ws/SP18-12.pdf>

12.2.11. The fishery management organization shall consider the most probable adverse human impacts on the stock/ecosystem under consideration, by assessing and, where appropriate, addressing and or/correcting them, taking into account available scientific information and local knowledge.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization considers the most probable adverse impacts of the unit of certification on the ecosystem, by assessing and, where appropriate, addressing and or/correcting them, taking into account the best scientific evidence available and local knowledge. Accordingly, these catches (including discards) are monitored and do not threaten these non-target stocks with serious risk of extinction, recruitment overfishing, or other impacts that are likely to be irreversible or very slowly reversible; if such impacts arise, effective remedial action is taken. Examples may include various stock and ecosystems assessment reports.



EVIDENCE:

As described above, ADFG regularly publishes salmon escapement estimates and uses this information in the development of regulations to ensure responsible management and protection of salmon from overharvest. ADFG also administrates salmon hatchery planning and permitting processes, and reviewed the effectiveness of this process to protect wild salmon stocks.

References: See citations in evidence

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10

Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)

High

Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)

Full Conformance

Non-conformance Number (if applicable):

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9.5.1.14 Supporting Clause 12.3.

12.3. The role of the *stock under consideration* in the food web shall be considered, and if it is a key prey species³²⁰ in the ecosystem, management objectives and measures shall be in place to avoid severe adverse impacts on dependent predators.

Relevance: Relevant

Evaluation Parameters

Met?

Process:

There is a mechanism in place by which the role of the stock under consideration in the food web is assessed and monitored, and its relative importance as a prey species is determined. If the species is considered by the fisheries management organization to be an important prey species, there shall be specific management objectives relating to minimizing the impacts of the fishery on dependent predators. The FAO Guidelines require that all sources of fishing mortality on the stock under consideration are taken into account (whether or not it is a prey species) in assessing the state of the stock under consideration, including discards, unobserved mortality, incidental mortality, unreported catches, and catches in other fisheries.



EVIDENCE:

Alaska's Policy for the Management of Sustainable Salmon Fisheries states that, "salmon escapement and harvest management decisions should be made in a manner that protects non-target salmon stocks or species"; and that "the role of salmon in ecosystem functioning should be evaluated and considered in harvest management decisions and setting of salmon escapement goals." These directives underscore key principles that are considered in the management of salmon in Alaska.

³²⁰ See Appendix 1 of Guidance to Performance Evaluation for the Certification of Wild Capture and Enhanced Fisheries in Alaska Version 2.0 May 2018.

12.3. The role of the *stock under consideration* in the food web shall be considered, and if it is a key prey species³²⁰ in the ecosystem, management objectives and measures shall be in place to avoid severe adverse impacts on dependent predators.

Current status/Appropriateness/Effectiveness:

Management measures have been developed and are in place to achieve the management objectives described in the process parameter, and there is evidence to demonstrate that they are successful to this end. If the species under assessment is not considered to be a key prey species, then this parameter shall be considered fulfilled.



EVIDENCE:

Although salmon are depredated in the marine environment (at various life stages) by species that include humpback whales (Megaptera novaeangliae), killer whales (Orcinus orca), harbor seals (*Phoca vitulina*), salmon sharks (*Lamna ditropis*), double-crested cormorants (*Phalacrocorax auratus*) and other species, salmon are not typically categorized as a key prey for most marine predators.

Yet, of all species listed here, resident killer whales are perhaps most dependent upon salmon as prey. Killer whale abundance in southern Alaska has increased in recent decades, possibly in response to increased salmon production,³²¹ although killer whales prefer Chinook salmon (Adams et al. 2016),³²² which have recently experienced sharp declines in abundance throughout their range. As noted elsewhere in this report, commercial harvest of Chinook salmon has been dramatically curtailed in recent years, which should benefit their non-human predators. But, perhaps ironically, predation by marine mammals may be hindering recovery of Chinook salmon. Chasco et al. (2017)³²³ estimated that predation from expanding marine mammal populations has steadily increased the biomass consumption of Chinook salmon over the past 40 years. Quoting from their article in Nature, “We find that from 1975 to 2015, biomass of Chinook salmon consumed by pinnipeds and killer whales increased from 6,100 to 15,200 metric tons (from 5 to 31.5 million individual salmon). Though there is variation across the regions in our model, overall, killer whales consume the largest biomass of Chinook salmon, but harbor seals (*Phoca vitulina*) consume the largest number of individuals. The decrease in adult Chinook salmon harvest from 1975–2015 was 16,400 to 9,600 metric tons. Thus, Chinook salmon removals (harvest + consumption) increased in the past 40 years despite catch reductions by fisheries, due to consumption by recovering pinnipeds and endangered killer whales. Long-term management strategies for Chinook salmon will need to consider potential conflicts between rebounding predators or endangered predators and prey.”

As noted, harvest of Chinook salmon in Alaska’s commercial salmon fisheries has been drastically reduced. However, bycatch of Chinook in some Alaskan groundfish trawl fisheries remains common. In 2010, NOAA Fisheries initiated a program to reduce Chinook salmon bycatch in trawl fisheries operating in the Bering Sea and Aleutian Islands. This program has continued to develop through time with the goal to limit incidental take of Chinook salmon, while maintaining economically important groundfish trawl fisheries.³²⁴ Salmon bycatch in these fisheries is reported annually³²⁵ and regulated through fisheries management plan amendments.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the role of the stock under consideration in the food web is considered, and if it is a key prey species in the ecosystem, objectives and management measures are in place to avoid severe adverse impacts on dependent predators. Examples may include various stock and ecosystem assessment reports.



EVIDENCE:

Salmon are widely recognized as important species in the natural food webs of Alaska’s marine, aquatic and terrestrial ecosystems. Significant management actions have been implemented to limit direct and incidental take of Chinook salmon by Alaska’s commercial salmon³²⁶ and groundfish trawl fisheries.³²⁷ These actions have undoubtedly offset harvest impacts to Chinook salmon, which is a preferred prey species of resident killer whales in Alaska. That said, expanding populations of (protected) marine mammals may, at

³²¹ <https://onlinelibrary.wiley.com/doi/epdf/10.1111/mms.12049>

³²² <https://www.sciencedirect.com/science/article/pii/S1574954116300383>

³²³ <https://www.nature.com/articles/s41598-017-14984-8>

³²⁴ <https://www.fisheries.noaa.gov/alaska/bycatch/chinook-salmon-bycatch-management-alaska>

³²⁵ <https://www.fisheries.noaa.gov/alaska/commercial-fishing/fisheries-catch-and-landings-reports#bsai/goa-groundfish-combined>

³²⁶ https://www.adfg.alaska.gov/index.cfm?adfg=pressreleases.pr&release=2019_04_01, <https://www.adfg.alaska.gov/static-f/applications/dcfnewsrelease/1020850172.pdf>, https://www.adfg.alaska.gov/index.cfm?adfg=pressreleases.pr&release=2018_03_29

³²⁷ <https://www.fisheries.noaa.gov/alaska/bycatch/chinook-salmon-bycatch-management-alaska>

12.3. The role of the *stock under consideration* in the food web shall be considered, and if it is a key prey species³²⁰ in the ecosystem, management objectives and measures shall be in place to avoid severe adverse impacts on dependent predators.

some point, threaten the viability of some Chinook salmon populations that have already been granted protection from fisheries. Such scenarios could generate serious management challenges and difficult decisions in future years.³²⁸

Beyond the marine environment, salmon are sometimes recognized as keystone species in freshwater and riparian habitats, providing food resources to bear, mink, otters, eagles and other species.³²⁹ Their ecological role in these habitats is protected by ADFG through establishment of adult escapement goals, designed to ensure sustainable wild salmon production, which in turn protects the integrity of natural food webs.

References: See citations in evidence

Numerical score:	Starting score	Number of EPs NOT met	Overall score
	10	0	10

Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)

High

Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)

Full Conformance

Non-conformance Number (if applicable):

9.5.1.15 Supporting Clause 12.4.

12.4. There shall be outcome indicator(s) consistent with achieving management objectives seeking to avoid severe adverse impacts on dependent predators resulting from the unit of certification fishing on a *stock under consideration* that is a key prey species³³⁰.

Relevance: Relevant

Evaluation Parameters

Process:

There is a mechanism in place that allows the establishment of outcome indicator(s) consistent with achieving management objectives seeking to avoid severe adverse impacts on dependent predators resulting from the unit of certification fishing on a stock under consideration that is a key prey species³³¹. Mortality in Alaska is usually accounted for all removals of given species. The state and federal fish accounting systems operate in depth and make an explicit effort to document all removals to confirm with regulations in force. The assessors shall ensure that all removals are accounted for in the system (fish ticket, eLandings) for stock assessment and management purposes.



EVIDENCE:

Harvest of salmon in Alaska is managed on the principle of sustained yield, in accordance with Alaska's Constitution, which states in Article 8 – Natural Resources,

- § 2. General Authority — The legislature shall provide for the utilization, development, and conservation of all natural resources belonging to the state, including land and waters, for the maximum benefit of the people.

³²⁸ Chasco et al. (2017) <https://www.nature.com/articles/s41598-017-14984-8>

³²⁹ Helfield & Naiman (2006) <https://link.springer.com/article/10.1007/s10021-004-0063-5>, Wilson & Halupka (1995) <https://onlinelibrary.wiley.com/doi/abs/10.1046/j.1523-1739.1995.09030489.x>

³³⁰ See Appendix 1 of Guidance to Performance Evaluation for the Certification of Wild Capture and Enhanced Fisheries in Alaska Version 2.0 May 2018.

³³¹ General harvest guidelines based on Lenfest report: "in fisheries with an intermediate level of information (which will include most well managed forage fisheries), there must be at least 40% of virgin or unfished biomass (B_0) left in the water, and fishing mortality should be no higher than 50% of F_{MSY} . Low information fisheries should leave at least 80% of B_0 in the water. High information fisheries (which have a high information not just on the fished stock, but the full ecosystem), may exceed these reference points if justified by the science, but in no case should fishing mortality exceed 75% of F_{MSY} or biomass fall below 30% of B_0 . Link: http://www.lenfestocean.org/~media/legacy/lenfest/pdfs/littlefishbigimpact_revised_12june12.pdf?la=en.

12.4. There shall be outcome indicator(s) consistent with achieving management objectives seeking to avoid severe adverse impacts on dependent predators resulting from the unit of certification fishing on a stock under consideration that is a key prey species³³⁰.

- § 3. Common Use — Wherever occurring in their natural state, fish, wildlife, and waters are reserved to the people for common use.
- § 4. Sustained Yield — Fish, forests, wildlife, grasslands, and all other replenishable resources belong to the State shall be utilized, developed, and maintained on the sustained yield principle, subject to preferences among beneficial uses.
- § 15. No Exclusive Right of Fishery [as amended in 1972 to allow limited entry] — No exclusive right or special privilege of fishery shall be created or authorized in the natural waters of the State. This section does not restrict the power of the State to limit entry into any fishery for purposes of resource conservation, to prevent economic distress among fishermen and those dependent upon them for a livelihood and to promote the efficient development of aquaculture in the state.

Sustained yield is achieved through the accounting of harvest – through FishTickets and eLandings systems³³² – and its impact on adult escapement, which is estimated annually through aerial surveys, tower counts, sonar and other methods. Escapement goals are set to ensure the continued function of natural ecosystems, including the conservation of dependent predators, in accordance with Alaska’s policies for the Management of Sustainable Salmon Fisheries, which states that,

“(2) salmon fisheries shall be managed to allow escapements within ranges necessary to conserve and sustain potential salmon production and maintain normal ecosystem functioning as follows

(F) salmon escapement and harvest management decisions should be made in a manner that protects non-target salmon stocks or species;

(G) the role of salmon in ecosystem functioning should be evaluated and considered in harvest management decisions and setting of salmon escapement goals;”

Collectively, these documents provide a management framework and accounting system that avoids adverse impacts from commercial salmon fisheries to dependent predators. See also supporting information in clause 12.3.

Current status/Appropriateness/Effectiveness:

There is evidence that outcome indicators and management measures have been developed, are in place, and have succeeded in achieving the objectives described in the process parameter.



EVIDENCE:

NOAA Fisheries conducts regular stock assessments³³³ of various salmon predators, including killer whales and Steller sea lions. NOAA Fisheries also conducts research in Southeast Alaska³³⁴ to:

- Understand the early marine ecology and distribution of juvenile salmon and associated species
- Build time series of oceanographic and ecological indices for the coastal waters of Southeast Alaska
- Identify factors affecting salmon productivity (e.g., climate change, prey, abundance, and predators)
- Produce data sets to evaluate hatchery and wild stock interactions, and forecast regional adult salmon returns

This work has improved managers’ understanding of the role salmon play in natural ecosystems and food webs, both as predators and prey. The status of these natural systems is regularly evaluated by NOAA Fisheries, complimenting the monitoring of adult salmon escapement performed annually by ADFG.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that there are effective outcome indicator(s) consistent with achieving management objectives seeking to avoid severe adverse impacts on dependent predators resulting from the unit of certification fishing on a stock under consideration that is a key prey species. Examples may include various stock and ecosystems assessment reports.



EVIDENCE:

³³² <https://www.adfg.alaska.gov/index.cfm?adfg=fishlicense.reporting>

³³³ <https://repository.library.noaa.gov/view/noaa/20606>

³³⁴ <https://www.fisheries.noaa.gov/alaska/sustainable-fisheries/southeast-alaska-coastal-monitoring>

12.4.	There shall be outcome indicator(s) consistent with achieving management objectives seeking to avoid severe adverse impacts on dependent predators resulting from the unit of certification fishing on a <i>stock under consideration</i> that is a key prey species ³³⁰ .															
NOAA Fisheries produces annual Ecosystem Status Reports for Alaska marine ecosystems, and publishes these reports online. ³³⁵ Each year, ADFG produces adult salmon escapement estimates and publishes reports of these estimates online. ³³⁶																
References:	See citations in evidence															
Numerical score:	Starting score		-		(		Number of EPs <u>NOT</u> met		x 3		)		=		Overall score	
	10						0								10	
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)															High	
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)															Full Conformance	
Non-conformance Number (if applicable):																

9.5.1.16 Supporting Clause 12.5.

12.5.	States shall introduce and enforce laws and regulations based on the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78).				
Relevance:	Relevant				
Evaluation Parameters					Met?
Process: <i>The appropriate regulations have been implemented.</i>					☒
EVIDENCE: MARPOL 73/78 (the "International Convention for the Prevention of Pollution from Ships") is one of the most important treaties regulating pollution from ships. Six Annexes of the Convention cover the various sources of pollution from ships and provide an overarching framework for international objectives. In the U.S., including Alaska, the Convention is implemented through the Act to Prevent Pollution from Ships (APPS). Under the provisions of the Convention, the United States can take direct enforcement action under U.S. laws against foreign-flagged ships when pollution discharge incidents occur within U.S. jurisdiction. When incidents occur outside U.S. jurisdiction or jurisdiction cannot be determined, the United States refers cases to flag states, in accordance with MARPOL. These procedures require substantial coordination between the Coast Guard, the State Department, and other flag states. Different regulations apply to vessels, depending on the individual state.					
Current status/Appropriateness/Effectiveness: <i>These regulations and their enforcement are effective and in line with the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78).</i>					☒
EVIDENCE: As described above, MARPOL 73/78 is enforced in Alaskan waters, and applies to participants to the commercial salmon fisheries.					
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the State has introduced and enforces laws and regulations based on the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78). Examples may include various regulations, data, and reports.</i>					☒
EVIDENCE:					

³³⁵ <https://www.fisheries.noaa.gov/resource/data/alaska-marine-ecosystem-status-reports-archive>

³³⁶ <https://www.adfg.alaska.gov/sf/FishCounts/>

12.5.	States shall introduce and enforce laws and regulations based on the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78).				
MARPOL 73/78 is applicable and enforced in Alaskan waters, as described by United States code. ³³⁷					
References:	See citations in evidence				
Numerical score:	Starting score	Number of EPs <u>NOT</u> met			Overall score
	10	- (		x 3) =	
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)					High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)					Full Conformance
Non-conformance Number (if applicable):					--

9.5.1.17 Supporting Clause 12.6.

12.6.	Research shall be promoted on the environmental and social impacts of fishing gear especially on the impact of such gear on biodiversity and coastal fishing communities.		
Relevance:	Relevant		
Evaluation Parameters			Met?
Process: <i>Research is promoted on the environmental and social impacts of fishing gear and its impacts on biodiversity and coastal fishing communities, as applicable to the fishery.</i>			☒
EVIDENCE: Both public and private entities fund or otherwise promote research that investigates social and environmental impacts of fishing gear, and associated impacts on biodiversity and local fishing communities in Alaska. Such entities include the Institute of Social and Economic Research at University of Alaska, ³³⁸ the Saltonstall-Kennedy Program, ³³⁹ and the Alaska Fisheries Development Foundation ³⁴⁰			
Current status/Appropriateness/Effectiveness: <i>There is evidence for this research, and it is considered appropriate for overall fisheries management purposes.</i>			☒
EVIDENCE: Alaska boasts a long history of promoting research to evaluate a wide range of environmental and social impacts associated with its commercial salmon fisheries. A common topic among gear-focused studies is the effect of net mesh size on the composition of catch, including works by Swanton and Sagalkin (1997), ³⁴¹ Muir et al. (1994) ³⁴² and Feddern et al. (2018). ³⁴³ A significant body of research has also focused on social aspects of commercial salmon fisheries in Alaska. With funds from the NOAA administrated Saltonstall-Kennedy Program, the Alaska Fisheries Development Foundation conducted research and published a report ³⁴⁴ describing social responsibility compliance aboard small commercial fishing vessels in Alaska, which included data from surveys of the commercial salmon fleet. Their findings suggested a high degree of safety compliance and social responsibility aboard small commercial fishing vessels in the state, but also suggested that some international standards were not particularly applicable to small craft fisheries in Alaska. They used this information to develop a list of priority criteria to evaluate social responsibility aboard			

³³⁷ <https://uscode.house.gov/view.xhtml?path=/prelim@title33/chapter33&edition=prelim>

³³⁸ <https://www.uaa.alaska.edu/research/institute-social-economic-research/>

³³⁹ <https://www.fisheries.noaa.gov/content/fy19-successful-saltonstall-kennedy-grant-applicants>

³⁴⁰ <https://www.afdf.org/projects/current-projects/social-responsibility/>

³⁴¹ <https://www.adfg.alaska.gov/FedAidPDFs/RIR.4K.1997.55.pdf>

³⁴² <https://www.arlis.org/docs/vol1/RIR/76896716.pdf>

³⁴³ Fedden et al. (2019) <https://www.nrcresearchpress.com/doi/abs/10.1139/cjfas-2018-0018?mobileUi=0&#.Xi9wYiN7nIU>

³⁴⁴ <https://www.afdf.org/wp-content/uploads/Social-Responsibility-on-Vessels-in-Alaska-High-Res-FINAL-2019-03-08-WEB.pdf>

12.6. Research shall be promoted on the environmental and social impacts of fishing gear especially on the impact of such gear on biodiversity and coastal fishing communities.

commercial fishing vessels that included: no slave labor, no child labor (except for nearshore fishing families, no discrimination, reasonable working/rest hours, required documentation and compliance with immigration and human rights policies.

Despite high compliance with safety precautions, commercial salmon fishing can be a dangerous occupation. The U.S. Center for Disease Control attributed the highest fatality rate among commercial fisheries in Alaska to salmon gillnet fisheries during years 2010-2014,³⁴⁵ though no fatalities were reported in any sector of Alaska commercial salmon fisheries in the following year.³⁴⁶ Non-fatal social impacts from salmon fisheries have also been researched. A recent study by Eckert et al. (2018)³⁴⁷ evaluated health risks experienced by commercial salmon fishermen participating in Bristol Bay gillnet fisheries, and found that they experienced higher prevalence of hearing loss and sleep apnea, likely due to loud working conditions with limited opportunity for sleep. On the other hand, Knapp et al. (2013) demonstrated that sport and commercial salmon fishing in Bristol Bay provide considerable benefits to local communities, by supporting a \$1.5 billion industry that ultimately employs nearly 14,000 people.³⁴⁸

A number of recent studies have examined more nuanced social aspects of commercial salmon fisheries in Alaska, including demographic evaluations and studies focused on the socio-economic importance of permit portfolio diversity.³⁴⁹ As postulated by Beaudreau et al. (2019)³⁵⁰ in their analyses of commercial fisheries in Alaska, "Heterogeneity in human responses and decision-making can contribute to the resilience of social-ecological systems in the face of environmental, political and economic pressures. In fishery systems worldwide, the ability of harvesters to maintain a diverse portfolio of fishing strategies is important for building adaptive capacity." Their findings speak to the importance of vocational versatility amid an ever-changing fisheries management landscape.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that research is promoted on the environmental and social impacts of fishing gear especially the impact of such gear on biodiversity and coastal fishing communities. Examples may include various regulations, data, and reports.


EVIDENCE:

The studies and participating research entities cited above provide robust evidence of a history of well-supported research within and around Alaska's commercial salmon fisheries, with some emphasis placed on the social and environmental impacts of specific gears used by the fleet.

References: See citations in evidence

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x 3	)	=	Overall score
	10			0				10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)								High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)								Full Conformance
Non-conformance Number (if applicable):								

³⁴⁵ <https://www.cdc.gov/niosh/docs/2017-171/pdf/2017-171.pdf>

³⁴⁶ https://www.adfg.alaska.gov/index.cfm?adfg=wildlifeneews.view_article&articles_id=757

³⁴⁷ Eckert et al. (2018) <https://www.tandfonline.com/doi/abs/10.1080/1059924X.2018.1425172?journalCode=wagr20>

³⁴⁸ https://iseralaska.org/static/legacy_publication_links/2013_04-TheEconomicImportanceOfTheBristolBaySalmonIndustry.pdf

³⁴⁹ <https://www.sciencedirect.com/science/article/pii/S0308597X18300411>, <https://www.nrcresearchpress.com/doi/abs/10.1139/cjfas-2017-0550#.Xi95PIN7nIU>

³⁵⁰ <https://onlinelibrary.wiley.com/doi/epdf/10.1111/faf.12364>

9.5.1.18 Supporting Clause 12.7.

12.7.	The fishery management organization shall make use, where appropriate, of Marine Protected Areas (MPAs). The general objectives for establishing MPAs shall include ensuring sustainability of fish stocks and fisheries, and protecting marine biodiversity and critical habitats.		
Relevance:	Relevant.		
Evaluation Parameters			
Process:	There is a process available for the consideration of MPAs as appropriate, as a tool for management.		Met? ☒
EVIDENCE:			
The establishment of marine protected areas (MPAs) in Alaska involves public processes with stakeholder input and government oversight at state and federal levels. ³⁵¹			
Current status/Appropriateness/Effectiveness:			☒
There shall be evidence for the use of MPAs, if appropriate (e.g. if they are employed MPAs as part of suite of management tools), as a tool for effective management with the general objectives of ensuring sustainability of fish stocks and fisheries, and protecting marine biodiversity and critical habitats.			
EVIDENCE:			
Alaska hosts an extensive and diverse network of MPAs. According to a recent report ³⁵² by NOAA Fisheries, 95 MPAs have been established in Alaska, covering a total area of 2,737,588 km2 in four major ecoregions.			
Evidence Basis:			☒
The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization has made use, where appropriate, of MPAs. The objectives of establishing MPAs are ensuring sustainability of fish stocks and fisheries, and protecting marine biodiversity and critical habitats. Examples may include various regulations, data, and reports.			
EVIDENCE:			
A federally curated digital map of MPAs, including those established in Alaska, is available at: https://marineprotectedareas.noaa.gov/dataanalysis/mpainventory/mpaviewer/			
A detailed map of MPAs in Alaska, indicating management authority and use restrictions, is included below and be viewed here: https://nmsmarineprotectedareas.blob.core.windows.net/marineprotectedareas-prod/media/archive/helpful_resources/inventoryfiles/AK_Map_090831_final.pdf			

³⁵¹ <https://www.adfg.alaska.gov/index.cfm?adfg=conservationareas.marineprotected>,
<https://nmsmarineprotectedareas.blob.core.windows.net/marineprotectedareas-prod/media/archive/fac/products/fac-arctic-principles-0616.pdf>,
<https://marineprotectedareas.noaa.gov/nationalsystem/>

³⁵² https://www.coris.noaa.gov/activities/mpa_us/

- 12.7. The fishery management organization shall make use, where appropriate, of Marine Protected Areas (MPAs). The general objectives for establishing MPAs shall include ensuring sustainability of fish stocks and fisheries, and protecting marine biodiversity and critical habitats.

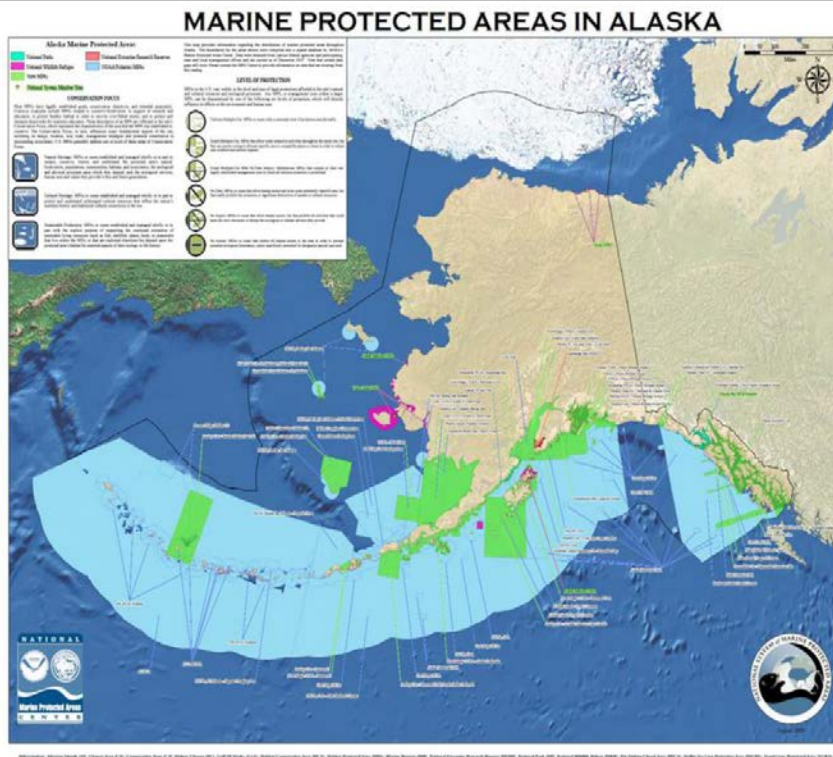


Figure 14. Marine Protected Areas in Alaska³⁵³.

References:	See citations in evidence					
Numerical score:	Starting score	Number of EPs <u>NOT</u> met				Overall score
	10	-	(	0	x 3)	= 10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)						High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)						Full Conformance
Non-conformance Number (if applicable):						--

³⁵³ https://s3.amazonaws.com/sfpcms.sustainablefish.org/2012/04/20/SFP_Benthic_Protection_Areas_Report_2012_April-97c98c67.pdf

9.5.2 Fundamental Clause 13. Fisheries enhancement activities

Where fisheries enhancement is utilized, environmental assessment and monitoring shall consider genetic diversity and ecosystem integrity.

9.5.2.1 Supporting Clause 13.1.

13.1.	The fishery management organization shall promote responsible development and management of fisheries enhancement, including an advanced evaluation of the effects of fisheries enhancement on genetic diversity and ecosystem integrity, based on the best scientific evidence available and/or verifiable and objective traditional, fisher, or community knowledge. Significant uncertainty is to be expected in assessing possible adverse ecosystem impacts of fisheries, including culture and enhancement activities. This issue can be addressed by taking a risk assessment/risk management approach.
Relevance:	Relevant
Evaluation Parameters	Met?
Process: <i>There is a high level of evaluation (conducive to proper planning of fisheries enhancement activities), based on the best scientific evidence available, of the effects of fisheries enhancement on genetic diversity and ecosystem integrity.</i>	☒
EVIDENCE: Alaska's commercial salmon fisheries harvest both wild- and hatchery-produced fish. Salmon hatcheries in Alaska are run by private non-profit corporations that must obtain a state-issued permit to operate. In accordance with Alaska Statute 16.10.400, ADFG administers the state's salmon hatchery permitting process,³⁵⁴ and is guided by the following policies: • The Alaska Finfish Genetics Policy³⁵⁵ • Alaska Fish Health and Disease Control Policies³⁵⁶ • The Policy for the Management of Sustainable Salmon Fisheries³⁵⁷ These policies explicitly promote responsible development and management of salmon hatcheries in Alaska. In the event that a hatchery operator wishes to alter conditions of their permit (e.g. increase production), a Permit Alteration Request (PAR) must be completed and submitted to ADFG for review, typically by February 15th of the year in which action might take effect. PARs are reviewed by regional planning teams, which make recommendations for their approval or denial. The commissioner may then consider their recommendations or other information to approve or deny the request. An approved PAR will result in a notice of permit alteration, which amends the hatchery permit, and may contain additional conditions or terms specified by the commissioner. This process is codified through Alaska Administrative Code 5 § 40.850, and promotes responsible operation and oversight of salmon hatcheries in Alaska. Recently, ADFG prepared and published a review of hatchery related plans, permits and policies designed to protect wild salmon stocks in Alaska.³⁵⁸ This document elegantly chronicles the history of salmon hatcheries in Alaska, reviews pertinent policies, practices, plans and permitting processes and considers two case studies: Chinook salmon in Southeast Alaska and pink salmon in Prince William Sound. Upon reviewing the SEAK Chinook hatchery programs, the authors concluded that: "On the whole, the Chinook salmon fishery enhancement program in SEAK is consistent with State of Alaska policies. The SEAK Chinook stock assessment program is adequate to provide a basis for some evaluation of the hatchery program in place. It provides quality data on harvest, escapement, and their compositions as well as a basis for monitoring hatchery straying. Recommendations for actions to improve consistency with state policies for SEAK Chinook salmon and actions that could be taken to improve the state of knowledge include the following: 1. Continued use of the Stock Appraisal Tool to identify significant and unique stocks (Genetic Policy). 2. Identify wild stock sanctuaries (Genetic Policy).	

³⁵⁴ <https://www.adfg.alaska.gov/index.cfm?adfg=hatcheries.hatchery>

³⁵⁵ https://www.adfg.alaska.gov/static-f/fishing/PDFs/research/genetics_finfinsh_policy.pdf

³⁵⁶ <http://www.sf.adfg.state.ak.us/FedAidPDFs/RIR.5J.2010.01.pdf>

³⁵⁷ <http://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2016-2017/jointcommittee/5aac39.pdf>

³⁵⁸ <http://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2018-2019/ws/SP18-12.pdf>

13.1. The fishery management organization shall promote responsible development and management of fisheries enhancement, including an advanced evaluation of the effects of fisheries enhancement on genetic diversity and ecosystem integrity, based on the best scientific evidence available and/or verifiable and objective traditional, fisher, or community knowledge. Significant uncertainty is to be expected in assessing possible adverse ecosystem impacts of fisheries, including culture and enhancement activities. This issue can be addressed by taking a risk assessment/risk management approach.

3. Consider implementing annual assessments of the Farragut River Chinook salmon stock including sampling to detect hatchery strays in the escapements.
4. Encourage hatcheries to collect additional gametes from wild fish to supplement the genetic variation in the broodstocks being used in Southeast Alaska and especially for the Chickamin River and Keta River broodstocks (Genetic Policy).
5. Encourage hatcheries to mark and coded wire tag a higher proportion of hatchery-origin Chinook salmon. Increasing the number of tagged hatchery-origin fish will improve the precision of hatchery contribution estimates to fisheries and escapements and provide an improved ability to detect hatchery strays.”

With respect to Prince William Sound pink salmon hatchery programs, the authors found that:

“Generally, the pink salmon fishery enhancement program in PWS is consistent with State of Alaska policies. There were two elements that were not consistent with guidance in the Genetic Policy:

1. identification of significant or unique stocks, and
2. establishment of wild stock sanctuaries.”

The authors followed these observations with a list of recommendations to improve compliance with policies aimed to protect the genetic integrity of wild fish and natural ecosystem function.

A series of hatchery evaluations from 2011-2017 examined individual hatchery programs throughout the state for consistency with policies and prescribed management practices (Stopha 2012a, 2012b, 2013a, 2013b, 2013c, 2013d, 2013e, 2013f, 2013g, 2014a, 2014b, 2014c, 2015a, 2015b, 2015c, 2015d, 2015e, 2015f, 2016b, 2016c, 2016d, 2017a, 2017b; Stopha & Musslewhite 2012; Musslewhite 2011a, 2011b). Evaluations reviewed hatchery management plans and permits, assessed program consistency with statewide policies, and identified remedies for any deficiencies found. Management plans and permits were examined for currency, consistency with each other, and accuracy of hatchery operation descriptions. Programs were generally found to be in compliance and issues were addressed as identified.

Also described in this ADFG report by Evenson et al. (2018) are a suite of studies being carried out by and in partnership with ADFG that examine stray rates of hatchery salmon and the magnitude of genetic impacts that result from hatchery-wild interactions on natural spawning grounds. This hatchery research,³⁵⁹ supported by state, federal and private resources, continues to provide managers with valuable information that promises to evaluate and improve the management of hatchery salmon in Alaska. To assess potential hatchery-wild interactions, a series of hatchery straying assessments were conducted beginning in the 2000s (Wilson 2024). Hatchery Sockeye Salmon straying was studied in Kodiak (Baer and Honnold 2002), the Copper River basin (Bidlack and Valentine 2009) and the Kenai River (Habicht et al. 2013; Stopha 2012). Hatchery Chum Salmon straying was assessed in Southeast Alaska (Piston and Heintz 2012a, 2012b; Josephson et al. 2021; McCarrel et al. 2023), Prince William Sound (Brenner et al. 2012; Knudsen et al. 2021) and Kodiak (Weber 2021, 2022). Hatchery pink salmon straying was assessed in Prince William Sound (Knudsen et al. 2021), lower Cook Inlet (Otis et al. 2018, 2020, 2021, 2022, 2023; Otis & Hollowell 2019) and Kodiak (Weber 2021, 2022). Hatchery Chinook Salmon straying was reportedly monitored on several Southeast Alaska systems over an extended period (Wilson 2024).

Assessments of the potential for ecosystem impacts in marine waters from Alaska salmon enhancements was assessed by Templin (2024) and Americus et al. (2025) based on hatchery contributions to total numbers and biomass of salmon in the ocean. Ruggerone & Irvine (2018) estimated that in the North Pacific for the period 1990 – 2015, 60% of the Chum Salmon, 15% of pink salmon and 5% of Sockeye Salmon were of hatchery origin. Alaska produced about 68% of the hatchery Pink Salmon and 18% of hatchery Chum Salmon. Japan produced about 75% of the hatchery Chum Salmon. Therefore, Alaska accounted for just 10% of the combined wild and hatchery total of pink salmon and 11% of Chum Salmon by number. Alaska-produced hatchery-origin salmon comprise an even lower percentage of the salmon total based on biomass (Templin 2024; Americus et al. 2025). Alaska hatchery-origin Pink salmon contribute just 2.1% and Chum Salmon contribute 5.3% of the combined total ocean biomass of pink, chum and Sockeye Salmon.

³⁵⁹ <https://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesResearch.main>

13.1.	The fishery management organization shall promote responsible development and management of fisheries enhancement, including an advanced evaluation of the effects of fisheries enhancement on genetic diversity and ecosystem integrity, based on the best scientific evidence available and/or verifiable and objective traditional, fisher, or community knowledge. Significant uncertainty is to be expected in assessing possible adverse ecosystem impacts of fisheries, including culture and enhancement activities. This issue can be addressed by taking a risk assessment/risk management approach.

Based on these estimates, Templin (2024) concluded that changes in Alaska hatchery production will likely not affect North Pacific-wide marine competition.

Hatchery salmon are a significant component of the marine ecosystem; interact directly or indirectly with many prey, competitor and predator species; and must inevitably have some influence on other ecosystem components. Hatchery Pink salmon from Alaska likely exert a marginal effect on the dynamics of the North Pacific marine ecosystem due to their low percentage contribution to total abundance. Large even-odd year differences in Pink salmon abundance are driven by wild production. Marginal effects of hatchery Pink salmon are dwarfed by normal variation in wild Pink salmon abundance, abundance of other salmon stocks, environmental drivers and other ecosystem elements. While hatchery fish likely contribute to density dependent changes in size at age, and survival, this concern does not rise to a level where ecosystem structure or function has likely been disrupted to a point where there is serious or irreversible harm.

Current status/Appropriateness/Effectiveness: <i>The overall fishery enhancement planning activities, policy/ies and management plans are considered appropriate for structuring the efforts to maintain genetic diversity and ecosystem integrity. Evaluation of the ecosystem shall be understood as it relates to the fishery enhancement activity occurring in the unit of certification area. Significant uncertainty is to be expected in assessing possible adverse ecosystem impacts of fisheries, including fishery enhancement activities. This issue can be addressed by taking a risk assessment/risk management approach.</i>	☒

EVIDENCE:

The State of Alaska has developed a series of policies governing the construction and operation of salmon hatcheries, with central focus to protect the genetic integrity and sustainability of wild salmon stocks. These policies are implemented primarily through ADFG, which maintains authority to issue or deny permits to potential hatchery operators. ADFG also regularly reviews and inspects hatchery operations, authorizes cost-recovery fisheries to allow continued operation of hatcheries and limit impacts to wild population, and directs harvest effort to catch hatchery-produced salmon.

Going beyond its management duties, ADFG has also embarked on a major research endeavor to evaluate the effectiveness of its policies governing salmon hatchery management. A comprehensive, long-term Alaska Hatchery Research Project was initiated in 2013 to address the following questions:

1. What is the genetic stock structure of Pink and Chum salmon in each region?
2. What is the extent and annual variability in straying of hatchery Pink salmon in Prince William Sound (PWS) and Chum Salmon in PWS and Southeast Alaska (SEAK)?
3. What is the impact on fitness (productivity) of wild Pink and Chum salmon stocks due to straying of hatchery Pink and Chum salmon?

The study was guided by a Science Panel that included scientists with broad experience in salmon fishery enhancement, research, and management—from ADF&G, University of Alaska, aquaculture associations, and National Marine Fisheries Service. Study funding was shared among the PNP operators, salmon processors, and the State of Alaska, and is administered by ADF&G. Field work was conducted by the Prince William Sound Science Center and the Sitka Sound Science Center. This work has produced extensive new information on genetic stock structure, straying and relative fitness in relation to hatchery enhancement (ADF&G 2018, 2022; Americus et al. 2022b, 2025).

Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization promotes responsible development and management of fishery enhancement, including an advanced evaluation of the effects of fishery enhancement on genetic diversity and ecosystem integrity, based on the best scientific evidence available. Examples may include various regulations, data, and assessment reports.</i>	☒

EVIDENCE:

13.1.	The fishery management organization shall promote responsible development and management of fisheries enhancement, including an advanced evaluation of the effects of fisheries enhancement on genetic diversity and ecosystem integrity, based on the best scientific evidence available and/or verifiable and objective traditional, fisher, or community knowledge. Significant uncertainty is to be expected in assessing possible adverse ecosystem impacts of fisheries, including culture and enhancement activities. This issue can be addressed by taking a risk assessment/risk management approach.

Salmon hatcheries in Alaska significantly enhance harvest opportunities experienced by the commercial fisheries. The number of fish produced by hatcheries and their contributions to harvest are reported annually by ADFG. Please see background section which shows the average percent contribution to commercial harvest by hatcheries for year as reported by ADFG.³⁶⁰

ADFG administers regulation of hatcheries through a transparent permitting process, that involves careful siting of facilities aimed to reduce interactions with wild stocks of salmon, in accordance with state policies. Alaska's hatchery policies, plans and permitting processes are readily accessible online, and their effectiveness at protecting natural ecosystems and the genetic integrity of wild salmon was recently reviewed in a report published by ADFG.

ADFG-supported research focused on potential effects from hatcheries on wild salmon have generated a wealth of peer-reviewed articles and technical reports that can be easily accessed online.³⁶¹

In summary, there is a strong body of evidence that demonstrates that fishery management agencies in Alaska promote responsible development of enhancement practices, and evaluate the effects of hatcheries on wild populations, ecosystems and the environment.

References:	See citations in evidence				
Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	Overall score
	10		)	0	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)					High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)					Full Conformance
Non-conformance Number (if applicable):					--

9.5.2.2 Supporting Clause 13.1.1.

13.1.1.	In the case of enhanced fisheries, the fishery management organization should take into account natural production, and shall take appropriate actions for conserving genetic diversity and biodiversity, protecting ETP species, maintaining aquatic ecosystems, minimizing adverse impacts on ecosystem structure and function, controlling disease, and maintaining the quality of enhanced stock. Enhanced fisheries may be supported in part by stocking organisms produced in aquaculture facilities or removed from wild stocks other than the stock under consideration. Aquaculture production for stocking purposes shall be managed and developed according to the above provisions.

Relevance:	Relevant
Evaluation Parameters	
Process: <i>There are processes through which the management system can develop enhanced fisheries supported in part by stocking organisms produced in enhancement facilities or removed from wild stocks other than the stock under consideration. The management system takes due regard of the natural production, conserving genetic diversity and biodiversity, protecting endangered species, maintaining the integrity of aquatic ecosystems, minimizing adverse impacts on ecosystem structure</i>	Met? ☒

³⁶⁰ <https://www.adfg.alaska.gov/FedAidPDFs/RIR.5J.2025.02.pdf>

³⁶¹ https://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesResearch.findings_updates#reports, Brenner et al. (2012) <https://link.springer.com/article/10.1007/s10641-012-9975-7>, http://146.63.61.200/static/fishing/PDFs/hatcheries/research/pwssc_hw_2015_report.pdf, Jasper et al. (2013) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3862497/pdf/pone.0081916.pdf>, http://146.63.61.200/static/fishing/PDFs/hatcheries/research/pwssc_2013.pdf, <http://www.adfg.alaska.gov/fedaipdfs/FMS12-01.pdf>

13.1.1. In the case of enhanced fisheries, the fishery management organization should take into account natural production, and shall take appropriate actions for conserving genetic diversity and biodiversity, protecting ETP species, maintaining aquatic ecosystems, minimizing adverse impacts on ecosystem structure and function, controlling disease, and maintaining the quality of enhanced stock. Enhanced fisheries may be supported in part by stocking organisms produced in aquaculture facilities or removed from wild stocks other than the stock under consideration. Aquaculture production for stocking purposes shall be managed and developed according to the above provisions.

and function, controlling disease, and maintaining the quality of enhanced material. As appropriate, there are also management objectives and measures consistent with avoiding significant negative impacts of enhancement activities on the natural reproductive component of the stock under consideration and any on other wild stocks from which the organisms for stocking are being removed.

EVIDENCE:

Enhancement of commercial salmon fisheries in Alaska is guided by three key policy documents that prioritize fish health, protection of genetic diversity, and natural production by wild salmon, these being:

1. The Alaska Fish Health and Disease Control Policy³⁶² states the ADFG Fish Pathology Mission, as it “monitors and controls finfish and shellfish diseases statewide (according to Title 16 of the Alaska Statutes) by oversight of wild and hatchery fish and shellfish health, conducting diagnostic surveys, developing finfish and shellfish disease policies and by advising the commissioner of ADF&G and other state and federal authorities on fish disease issues”.
2. The Policy for Management of Sustainable Salmon Fisheries,³⁶³ which states that, “effects and interactions of introduced or enhanced salmon stocks on wild salmon stocks should be assessed; [and] wild salmon stocks and fisheries on those stocks should be protected from adverse impacts from artificial propagation and enhancement efforts”; and
3. The Alaska Department of Fish and Game Finfish Genetic Policy,³⁶⁴ which states that, “Gene flow from hatchery fish straying and intermingling with wild stocks may have significant detrimental effects on wild stocks. First priority will be given to protection of wild stocks from possible harmful interactions with introduced stocks. Stocks cannot be introduced where the introduced stock may have significant interactions or impact on significant or unique wild stocks.”

Taken together, these policies have provided clear guidance for the development of salmon hatcheries that enhance commercial fishing opportunities in Alaska. Implementation of state policies requires careful planning to ensure that the construction and operation of salmon hatcheries in Alaska serves to protect wild fish and surrounding ecosystems.

Salmon hatchery planning in Alaska is described in state law (AS 16.10.375) and is the responsibility of Regional Planning Teams (RPTs). RPTs operate as described in regulation (5 AAC 40.300-370) and prepare regional comprehensive salmon plans,³⁶⁵ provide recommendations on PNP hatchery permit alterations and applications for new hatcheries, and may also review hatchery annual management plans. RPTs are composed of representatives from regional aquaculture associations and ADF&G staff. All RPT meetings are open to the public and public participation is encouraged.

Current status/Appropriateness/Effectiveness:

These measures are considered effective in terms of reflecting the key overarching management objectives and ensuring that appropriate measures are implemented dealing with the effects and ecological dynamics of enhanced and wild stock interactions, to ensure genetic diversity of wild stocks is maintained. There is evidence that enhancement practices take into account the natural production (wild and enhanced stocks), and take appropriate actions for conserving genetic diversity and biodiversity, protecting ETP species, maintaining the integrity of aquatic ecosystems, minimizing adverse impacts on ecosystem structure and function, controlling disease, and maintaining the quality of enhanced material. The ecological and genetic interactions and effects between wild and enhanced stock and the potential deleterious effects arising from this shall be analyzed and assessed here. Accordingly, the individual provisions mentioned above shall be assessed for significant negative effects. Enhanced stocks shall not have a significant negative effect (i.e., genetic, ecological, physical displacement, resource competition) on wild fish stocks.



EVIDENCE:

³⁶² <http://www.adfg.alaska.gov/FedAidPDFs/RIR.5J.2014.04.pdf>

³⁶³ <http://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2016-2017/jointcommittee/5aac39.pdf>

³⁶⁴ http://www.adfg.alaska.gov/static-f/fishing/PDFs/research/genetics_finfish_policy.pdf

³⁶⁵ <https://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesPlanning.enhance>

13.1.1. In the case of enhanced fisheries, the fishery management organization should take into account natural production, and shall take appropriate actions for conserving genetic diversity and biodiversity, protecting ETP species, maintaining aquatic ecosystems, minimizing adverse impacts on ecosystem structure and function, controlling disease, and maintaining the quality of enhanced stock. Enhanced fisheries may be supported in part by stocking organisms produced in aquaculture facilities or removed from wild stocks other than the stock under consideration. Aquaculture production for stocking purposes shall be managed and developed according to the above provisions.

Alaska provides clear policy guidance for salmon fisheries enhancement that explicitly prioritizes conservation of genetic diversity of wild populations, fish health and functional natural ecosystems. ADFG regulates the operation of hatcheries through a permitting process that considers facilities siting and potential impacts to wild salmon populations and the environment. One requirement of hatchery permit issuance is that “a hatchery be located in an area where a reasonable segregation from natural stocks occurs, but, when feasible, in an area where returning hatchery fish will pass through traditional salmon fisheries” (Alaska Statute 16.10.420).³⁶⁶ Beyond permitting, planning meetings for hatchery development and operation are conducted transparently and are open to the public.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that in the case of enhanced fisheries, the fishery management organization takes into account the natural production, and takes appropriate actions for conserving genetic diversity and biodiversity, protecting ETP species, maintaining the integrity of aquatic ecosystems, minimizing adverse impacts on ecosystem structure and function, controlling disease, and maintaining the quality of stocking material.

Enhanced fisheries may be supported in part by stocking organisms produced in enhancement facilities or removed from wild stocks other than the stock under consideration. Enhanced production for stocking purposes is managed and developed according to the above provisions. Examples may include various regulations, data, and reports.



EVIDENCE:

ADFG recently prepared and published a review³⁶⁷ of hatchery policies, plans and permitting processes, including an assessment of two hatchery programs and their compliance with policies aimed to protect wild salmon and genetic diversity. This report provides a thorough history of salmon hatcheries in Alaska, cites and describes the rationale behind policies designed to protect natural ecosystem structure and function. Additional documents cited throughout this report, such as ADFG’s hatchery permitting guidelines, provide clear evidence that fisheries management agencies in Alaska work to protect wild salmon and natural ecosystems from adverse effects that might arise through enhancement activities.

References: See citations in evidence

Numerical score:	Starting score	Number of EPs <u>NOT</u> met				Overall score
	10	-	(	0	x 3)	= 10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)						High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)						Full Conformance
Non-conformance Number (if applicable):						

9.5.2.3 Supporting Clause 13.2.

13.2. The fishery management organization shall produce and regularly update fishery enhancement development strategies and plans, as required, to ensure that fishery enhancement development is ecologically sustainable and to allow the rational use of resources shared by enhancement and other activities.

Relevance: Relevant

Evaluation Parameters

Met?

³⁶⁶ https://www.adfg.alaska.gov/static/fishing/PDFs/hatcheries/hatchery_statutes.pdf

³⁶⁷ <http://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2018-2019/ws/SP18-12.pdf>

13.2. The fishery management organization shall produce and regularly update fishery enhancement development strategies and plans, as required, to ensure that fishery enhancement development is ecologically sustainable and to allow the rational use of resources shared by enhancement and other activities.

Process:

There are defined strategies and plans for enhancement development in accordance with ecological sustainability and rational use of resources shared by enhancement and other activities.



EVIDENCE:

Regional Planning Teams are tasked with developing Comprehensive Salmon Plans and Annual Management Plans for enhanced salmon production and harvest. Proposed hatcheries must complement the existing Comprehensive Salmon Plan to gain approval. Significant changes to hatchery production or operation are subject to mandatory review by ADFG through an annual Permit Alteration Request process, which, if approved, results in an amendment to an existing hatchery operation permit.

According to Alaska Statute 16.10.420 "The department shall require, in a permit issued to a hatchery operator, that

- (1) salmon eggs procured by the hatchery must be from the department or a source approved by the department;
- (2) salmon eggs or resulting fry may not be placed in waters of the state other than those specifically designated in the permit;
- (3) salmon eggs or resulting fry, sold to a permit holder by the state or by another party approved by the department, may not be resold or otherwise transferred to another person;
- (4) salmon may not be released by the hatchery before department approval, and, for purposes of pathological examination and approval, the department shall be notified of the proposed release of salmon at least 15 days before the date of their proposed release by the hatchery;
- (5) diseased salmon be destroyed in a specific manner and place designated by the department;
- (6) adult salmon be harvested by hatchery operators only at specific locations as designated by the department;
- (7) surplus eggs from salmon returning to the hatchery be made available for sale first to the department and then, after inspection and approval by the department, to operators of other hatcheries authorized by permit to operate under AS 16.10.400 - 16.10.470;
- (8) if surplus salmon eggs are sold by a permit holder to another permit holder, a copy of the sales transaction be provided to the department;
- (9) [Repealed, Sec. 5 ch 110 SLA 1980].
- (10) a hatchery be located in an area where a reasonable segregation from natural stocks occurs, but, when feasible, in an area where returning hatchery fish will pass through traditional salmon fisheries."

Current status/Appropriateness/Effectiveness:

If studies have concluded that enhancement developments are ecologically sustainable in the interested unit of certification area, the enhancement developments allow the rational sharing of resources with other activities.



EVIDENCE:

As described in Supporting Clause 13.1.1, salmon hatchery planning in Alaska is the responsibility of Regional Planning Teams (RPTs), which produce and publish Comprehensive Salmon Plans³⁶⁸ and Annual Management Plans.³⁶⁹ These plans document enhancement efforts, set production goals, and identify potential for new projects, are reviewed by the public and ADFG and are required by law (AS 16.10.375).

Private non-profit hatcheries are required by law to produce annual reports³⁷⁰ that document egg take, releases and adult returns. Any proposed alteration to hatchery production requires a Permit Alteration Request (PAR), which typically relate to an increase in production, new release site or stock used by the hatchery. Permit alteration requests are reviewed by regional planning teams, which make recommendations for their approval or denial. The commissioner may then consider their recommendations or other information to approve or deny the request. An approved PAR will result in a notice of permit alteration, which amends the hatchery permit, and may contain additional conditions or terms specified by the commissioner.

³⁶⁸ <https://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesPlanning.enhance>

³⁶⁹ <https://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesPlanning.annual>

³⁷⁰ <https://www.adfg.alaska.gov/index.cfm?adfg=hatcheries.annual>

13.2. The fishery management organization shall produce and regularly update fishery enhancement development strategies and plans, as required, to ensure that fishery enhancement development is ecologically sustainable and to allow the rational use of resources shared by enhancement and other activities.

In addition to administering the hatchery permitting process, ADFG prepares and publishes Annual Fisheries Enhancement Reports,³⁷¹ as required by Alaska Statute 16.05.092. These reports are presented to the state legislature and describe annual levels of hatchery salmon production in Alaska, as well as harvest numbers of hatchery and wild stocks, and estimated values of commercially harvested salmon.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization produces and regularly updates fishery enhancement development strategies and plans, as required, to ensure that enhancement development is ecologically sustainable and to allow the rational use of resources shared by enhancement and other activities. Examples may include various regulations, data, and assessment reports.



EVIDENCE:

A variety of Alaska Statutes, reports and permit issuance requirements, cited above, provide clear evidence that ADFG regularly reviews and updates its hatchery management strategy to ensure that fishery enhancement is ecologically sustainable and promotes a rational use of the fishery resource.

References: See citations in evidence

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)									High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)									Full Conformance
Non-conformance Number (if applicable):									

9.5.2.4 Supporting Clause 13.2.1.

13.2.1. The fishery management organization shall ensure that the livelihoods of local communities, and their access to fishing grounds, are not negatively affected by enhanced fisheries developments.

Relevance: Relevant

Evaluation Parameters

Met?

Process:

There is a mechanism in place by which the impacts of enhanced fisheries developments on local communities and access to fishing grounds are predicted and monitored. The outputs of this mechanism are used to define management objectives related to minimizing the negative impacts of enhanced fisheries developments.



EVIDENCE:

Alaska's Constitution states, "§ 15. No Exclusive Right of Fishery [as amended in 1972 to allow limited entry] — No exclusive right or special privilege of fishery shall be created or authorized in the natural waters of the State. This section does not restrict the power of the State to limit entry into any fishery for purposes of resource conservation, to prevent economic distress among fishermen and those dependent upon them for a livelihood and to promote the efficient development of aquaculture in the state".

This foundational language codifies regulated access to enhanced fishery resources by community members in Alaska, safeguarding their livelihoods and welfare.

Current status/Appropriateness/Effectiveness:



³⁷¹ <https://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesOtherInfo.reports>

13.2.1. The fishery management organization shall ensure that the livelihoods of local communities, and their access to fishing grounds, are not negatively affected by enhanced fisheries developments.

Measures, regulations, and policies have been designed, are in place, and have succeeded in achieving the objectives described in the process parameter. The focus is to ensure that the livelihoods of local communities, and their access to fishing grounds, are not negatively affected (e.g. geographical displacement) by enhanced fisheries developments. There may be circumstances where economic tradeoffs may be required to improve overall community benefit.

EVIDENCE:

Hatchery production of salmon in Alaska is designed to serve common property fisheries, accessible to commercial, recreational, subsistence stakeholders, all of whom have opportunity to benefit from the enhanced fishery resource. Hatchery planning occurs through a public process that allows local community members to have a say in hatchery construction, expansion and operations. According to Alaska Statute 16.10.410385, which describes the process of hearings before issuance of a hatchery permit,

- a) At least 30 days before the issuance of a permit under AS 16.10.400, a public hearing shall be held in a central location in the vicinity of the proposed hatchery facility.
- b) Notice of the hearing shall be published in a newspaper of general circulation once a week for three consecutive weeks, with completion of the notice at least 10 days before the hearing.
- c) The hearing shall be conducted by the department. At a hearing for a permit under AS 16.10.400 (a)(1), the applicant shall present a plan for the proposed hatchery, describing the capacity of the hatchery and other relevant facts that may be of interest to the department or the public. Interested members of the public shall be afforded an opportunity to be heard.
- d) The department shall record and consider objections and recommendations offered by the public at the hearing conducted under this section. It shall respond in writing, within 10 days after the hearing is held, to any specific objections offered by a member of the public at the hearing.

Alaska Statute 16.10.410 provides a legal foundation to safeguard the welfare of local communities where salmon hatcheries operate in Alaska. Following the public review process, the hatchery permit application is then forwarded to the ADFG Commissioner, who, by regulation 5 AAC 40.220, must consider (among other criteria) whether the hatchery would result in "significant alterations of traditional fisheries".

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization ensures that the livelihoods of local communities, and their access to fishing grounds, are positively affected by enhanced fisheries developments. Examples may include various regulations, data, and assessment reports.


EVIDENCE:

Language in Alaska's Constitution safeguards access to common property fishery resources, including enhanced salmon populations. State statute (AS 16.10.410) further ensures that community members have a voice in the planning and permitting process of salmon hatcheries, further providing protection over their traditional fishing practices and livelihoods.

References: See citations in evidence

Numerical score:	Starting score		Number of EPs <u>NOT</u> met							Overall score
	10	–	(	0	x	3	)	=	10	
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)										High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)										Full Conformance
Non-conformance Number (if applicable):										

9.5.2.5 Supporting Clause 13.3.

13.3	Effective procedures specific to fisheries enhancement activities shall be established to undertake appropriate environmental assessment and monitor (with the aim of minimizing) adverse ecological changes caused by inputs (e.g., pollution, disease) and their related economic and social consequences.		
Relevance:	Relevant		
Evaluation Parameters			Met?
Process: <i>There is a mechanism in place by which the potential environmental impacts of fisheries enhancement are predicted and monitored. This mechanism shall be used to develop management objectives related to the minimization of adverse ecological changes.</i>			☒
EVIDENCE: Alaska Statute 16.10.420 lists a series of conditions that must be met to qualify issuance of a salmon hatchery permit. These conditions include required measures aimed to limit potential negative impacts from hatchery operations on wild salmon populations, including risks from genetic introgression and disease, and surrounding ecosystems. See Supporting Clause 13.2 for this list of conditions. Furthermore, Alaska Statute 16.10.460 states, “(a)As a condition of and in consideration for a permit to operate a hatchery under AS 16.10.400- 16.10.470, an inspection of the hatchery facility by department [ADFG] inspectors shall be permitted by the permit holder at any time the hatchery is operating. The inspection shall be conducted in a reasonable manner. (b) The cost of an inspection performed by the department under AS 16.10.400 - 16.10.470 shall be borne by the department.” In accordance with AS 16.10.460, ADFG has regularly inspected salmon hatcheries throughout the state and, beginning in 2011, developed reports describing levels of compliance with each facility’s permit, state policies (e.g. Finfish Genetics Policy, Fish Health and Disease Control Policy, etc.) and prescribed management practices. ADFG also publishes recommendations for improved compliance and operation for each hatchery inspected through these reports. Discharge of wastewater from a hatchery facility requires an APDES permit³⁷² from the Alaska Department of Environmental Conservation’s (DEC) Division of Water. In support of the U.S. Federal Clean Water Act, Alaska’s Anti-degradation Policy (see Alaska Administrative Codes 18 AAC 70.015 – 18 AAC 70.016)³⁷³ sets protections for water quality, with additional protections for water of exceptional ecological or recreational significance (Tier 3 waters). These protections are enforced through Alaska DEC.³⁷⁴			
Current status/Appropriateness/Effectiveness: <i>Management measures and regulations have been designed, are in place, and have succeeded in achieving the management objectives described in the process parameter.</i>			☒
EVIDENCE: ADFG regularly inspects salmon hatcheries throughout the state to ensure compliance with permits, as well as Fish Health, genetic and other policies. ADFG’s Fish Pathology Laboratory³⁷⁵ provides invaluable support to PNP salmon hatcheries through disease testing, treatment, education and regular inspection services.			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that effective procedures specific of fisheries enhancement are established to undertake appropriate environmental assessment and monitoring with the aim of minimizing adverse ecological changes such as those caused by inputs (e.g., pollution, disease) from enhancement activities and their related economic and social consequences. Examples may include various regulations, data, and assessment reports.</i>			☒
EVIDENCE:			

³⁷² <https://dec.alaska.gov/water/wastewater/>

³⁷³ <https://dec.alaska.gov/media/1046/18-aac-70.pdf>

³⁷⁴ <https://dec.alaska.gov/water/water-quality/standards/antidegradation/>

³⁷⁵ <https://www.adfg.alaska.gov/index.cfm?adfg=fishingpathologylab.main>

13.3	Effective procedures specific to fisheries enhancement activities shall be established to undertake appropriate environmental assessment and monitor (with the aim of minimizing) adverse ecological changes caused by inputs (e.g., pollution, disease) and their related economic and social consequences.							
Evaluation reports of Alaska salmon hatcheries have been produced by ADFG and published to their website. ³⁷⁶								
References:	See citations in evidence							
Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	x 3	)	=	Overall score
	10			0				10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)								High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)								Full Conformance
Non-conformance Number (if applicable):								

9.5.2.6 Supporting Clause 13.4.

13.4	With due regard to the assessment approach employed, stock assessment of enhanced fisheries shall consider the separate contributions from enhanced and natural production.				
Relevance:	Relevant				
Evaluation Parameters					Met?
Process: <i>As appropriate, there is a mechanism for stock assessment of enhanced fisheries that considers the separate contributions from aquaculture and natural production.</i>					☒
EVIDENCE: In Alaska, the vast majority of hatchery-produced salmon are marked via thermal- or other shock-induced otolith band alteration technique, generally following the methods described by Volk et al. (1999). ³⁷⁷ This mass-marking procedure allows fisheries managers opportunity to analyze otoliths from commercially harvested salmon and determine the separate contributions from wild and hatchery production.					
Current status/Appropriateness/Effectiveness: <i>There is evidence that stock assessment of enhanced fisheries considers the separate contributions from enhanced and natural production.</i>					☒
EVIDENCE: Otolith marking provides the primary mechanism by which fisheries managers in Alaska can consider the separate contributions from hatchery and wild production to commercial harvest. Coded wire tags represent another. Data from these marks and tags are collected on a grand scale by ADFG's Mark, Tag and Age Laboratory (MTAL). ³⁷⁸ The goals of the MTAL are to provide fisheries managers and researchers with timely, current, and historical biological data to help them manage, preserve, protect, and perpetuate Alaska's fishery resources. Otolith mark data collected by the MTAL is uploaded into a searchable database that can be used to generate summary reports. ³⁷⁹ This resource is, in turn, used by fisheries managers to evaluate hatchery and wild contributions to Alaska commercial salmon fisheries, as documented through annual reports. ³⁸⁰ According to the 2018 Alaska Fisheries Enhancement Report, "The Alaska state constitution, statutes, and regulations mandate that ADF&G manage salmon returns for wild stock conservation. This means that escapement goals are established for important salmon systems, and the fisheries are managed to meet these goals."					

³⁷⁶ <https://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesOtherInfo.reports>

³⁷⁷ <https://www.sciencedirect.com/science/article/abs/pii/S0165783699000739>

³⁷⁸ <https://mtalab.adfg.alaska.gov/>

³⁷⁹ <https://mtalab.adfg.alaska.gov/OTO/reports/MarkSummary.aspx>

³⁸⁰ <https://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesOtherInfo.reports>

13.4	With due regard to the assessment approach employed, stock assessment of enhanced fisheries shall consider the separate contributions from enhanced and natural production.

Wild and hatchery returns are managed to meet wild stock escapement goals. In some cases, one species of hatchery fish returns at the same time as other, more predominant wild stock species, and the hatchery fish are harvested as incidental catch. For example, in Southeast Alaska, hatchery-produced chum salmon return across the timing of both sockeye and pink salmon and are caught during fisheries that are managed for sockeye or pink salmon. Chum salmon that are not harvested in the sockeye and pink salmon fisheries return to isolated release sites in bays where they can be harvested with minimal impact to wild stocks.

For some fisheries, both hatchery and wild stocks of the same species return simultaneously. For instance, in Prince William Sound, hatchery stocks of pink salmon return at the same time as the wild pink salmon stocks they are derived from. All hatchery-produced pink salmon are otolith marked. Otoliths are read from samples of fish collected from the commercial fishery to apportion the catch between hatchery and wild stocks during the season so that managers can manage for the wild stock return.

Comprehensive marking of Alaska hatchery production has been implemented to facilitate assessment of hatchery contributions to harvest and natural spawning escapements (Figure 6). Contributions from enhanced and natural production are assessed based on mark sampling of returning salmon in the fisheries and spawning escapements.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that with due regard to the assessment approach employed, stock assessment of enhanced fisheries considers the separate contributions from enhancement and natural production. Examples may include various regulations, data, and assessment reports.


EVIDENCE:

As described above, salmon hatchery managers in Alaska mass mark the vast majority of salmon they produce, which are then detected through sampling of the commercial fisheries and subsequent analysis by ADFG. This approach provides robust accounting of hatchery and wild contributions to commercial salmon harvest in Alaska, which has been clearly documented by ADFG.³⁸¹

Hatchery contributions to the salmon harvest are summarized in Figure 7 and detailed by fishery and hatchery of origin in Wilson (2024).

Hatchery straying assessments in spawning escapements have been conducted beginning in the 2000s (Wilson 2024). Hatchery Sockeye Salmon straying was studied in Kodiak (Baer and Honnold 2002), the Copper River basin (Bidlack and Valentine 2009) and the Kenai River (Habicht et al. 2013; Stopha 2012). Hatchery Chum Salmon straying was assessed in Southeast Alaska (Piston and Heintz 2012a, 2012b; Josephson et al. 2021; McCarrel et al. 2023), Prince William Sound (Brenner et al. 2012; Knudsen et al. 2021) and Kodiak (Weber 2021, 2022). Hatchery Pink salmon straying was assessed in Prince William Sound (Knudsen et al. 2021), lower Cook Inlet (Otis et al. 2018, 2020, 2021, 2022, 2023; Otis & Hollowell 2019) and Kodiak (Weber 2021, 2022). Hatchery Chinook Salmon straying was reportedly monitored on several Southeast Alaska systems over an extended period (Wilson 2024).

Hatchery otolith marking has now been fully implemented for all species in Kodiak hatcheries (Weber 2021, 2022). At Kitoi Hatchery, chum have been marked since 2013 using thermally stratified lake water, sockeye have been dry marked since 2013, and coho have been dry marked since 2017 with 100% marking since 2019. Pink salmon were experimentally marked using saltwater in 2017. Saltwater was previously used for periodic fungal control and hatchery improvements provided the capability of saltwater use for otolith marking. Following initial success, 20% of the pink salmon production was marked in 2018 and 100% marking occurred in 2019 and 2020. KRAA also initiated otolith recovery efforts of adults in the 2020 hatchery return, fishery harvest and in selected rivers on NE Kodiak and Afognak Islands. Sampling design funding was provided by disaster relief dollars in a grant from the Pacific States Marine Fisheries Commission.

References:	See citations in evidence

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x 3	)	=	Overall score
	10			0				10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)								High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)								Full Conformance
Non-conformance Number (if applicable):								

³⁸¹ <http://www.adfg.alaska.gov/FedAidPDFs/RIR.5J.2019.01.pdf>

9.5.2.7 Supporting Clause 13.5.

13.5.	Regarding the enhanced components of the <i>stock under consideration</i>, when a natural reproductive stock component is maintained and fishery production is based primarily on natural biological production within the ecosystem of which the <i>stock under consideration</i> forms a part, enhanced fisheries shall meet the following criteria: (1) the species shall be native to the fishery's geographic area or introduced historically and have subsequently become established as part of the natural ecosystem, (2) there shall be natural reproductive components of the <i>stock under consideration</i>, and (3) the growth during the post-release phase shall be based upon food supply from the natural environment and the production system shall operate without supplemental feeding.
Relevance:	Relevant
Evaluation Parameters	Met?
Process: <i>There is a process in place by which enhanced fisheries are managed, and which includes consideration of the origin of enhanced species, the maintenance of naturally reproducing components, and the food supply during the post-release phase. The intent of this clause does not refer to net pen rearing after fish are removed from enhancement facilities, but to the time when fish are released in the wild for their ocean migration. Note that in Alaska the first principal of enhancing fisheries through hatchery production is that the fitness and productivity of wild stocks should be maintained. An important method to accomplish this is to direct separate fisheries onto wild stocks and hatchery stocks. It may occur that the fishery on enhanced stocks is larger and that the aggregate fishery predominately catches enhanced stocks, in which case the aggregate fishery is based primarily on enhanced production but it is not at variance with the first principal.</i>	☒
EVIDENCE: By design and with oversight from ADFG, commercial salmon fisheries in Alaska harvest both hatchery- and natural origin fish.³⁸² Adult salmon used to contribute eggs for initial and continued hatchery production must be of local origin where significant wild populations co-occur. This practice is advocated by Alaska's Finfish Genetics Policy, which states that a "watershed with a significant wild stock can only be stocked with progeny from the indigenous stocks". This policy is enforced by ADFG with authority from Alaska Statute 16.10.420, which states that "salmon eggs procured by the hatchery [requesting a permit to operate] must be from the department or a source approved by the department". Article 8 of the Alaska State Constitution mandates that natural resources including fish, be managed on the principle of sustained yield. This mandate ensures conservation of wild populations, even in context of ongoing harvest, and is reflected in Alaska's Policy for the Management of Sustainable Salmon Fisheries,³⁸³ which states that: 1) wild salmon stocks and the salmon's habitats should be maintained at levels of resource productivity that assure sustained yields 2) salmon fisheries shall be managed to allow escapements within ranges necessary to conserve and sustain potential salmon production and maintain normal ecosystem functioning 3) effective management systems should be established and applied to regulate human activities that affect salmon 4) public support and involvement for sustained use and protection of salmon resources should be sought and encouraged 5) in the face of uncertainty, salmon stocks, fisheries, artificial propagation, and essential habitats shall be managed conservatively Alaska Statute 16.40.210 prohibits "finfish farming", meaning that a "person may not grow or cultivate finfish in captivity or under positive control for commercial purposes", but allowing "the ability of a nonprofit corporation that holds a salmon hatchery permit under AS 16.10.400 to sell salmon returning from the natural water of the state, as authorized under AS 16.10.450, or surplus salmon eggs, as authorized under AS 16.10.420 and 16.10.450". Of significant importance, here, is that sale of hatchery fish is permissible after returning from the natural water of the state, where supplemental feeding does not occur.	
Current status/Appropriateness/Effectiveness:	☒

³⁸² <https://www.adfg.alaska.gov/FedAidPDFs/RIR.5J.2019.01.pdf>

³⁸³ <http://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2016-2017/jointcommittee/5aac39.pdf>

13.5.	Regarding the enhanced components of the <i>stock under consideration</i> , when a natural reproductive stock component is maintained and fishery production is based primarily on natural biological production within the ecosystem of which the <i>stock under consideration</i> forms a part, enhanced fisheries shall meet the following criteria: (1) the species shall be native to the fishery's geographic area or introduced historically and have subsequently become established as part of the natural ecosystem, (2) there shall be natural reproductive components of the <i>stock under consideration</i> , and (3) the growth during the post-release phase shall be based upon food supply from the natural environment and the production system shall operate without supplemental feeding.
There is evidence to demonstrate that the species in the stock under consideration is native to the fishery's geographic area, or was introduced historically and has subsequently become established as part of the natural ecosystem.	
EVIDENCE: The salmon hatchery permitting process, administrated by ADFG, ensures that appropriate brood stocks are used to found hatchery populations, in accordance with the Finfish Genetics Policy. Evaluation reports for individual hatcheries, which document the source of eggs used in their salmon programs, have been developed and published by ADFG. ³⁸⁴	
Current status/Appropriateness/Effectiveness: There is evidence to demonstrate that there is a naturally reproductive component of the stock under consideration.	☑
EVIDENCE: Naturally reproductive components of salmon stocks subject to commercial harvest are monitored annually through adult escapement surveys and estimates, performed by ADFG. Escapement estimates are evaluated in context of escapement goals, and if a given stock chronically fails to meet escapement goals it is awarded additional protections through recognition as a "stock of concern" ³⁸⁵	
Current status/Appropriateness/Effectiveness: There is evidence to demonstrate that the growth of the stocked component during the post-release phase is based upon food supply from the natural environment and the production system operates without supplemental feeding.	☑
EVIDENCE: As previously noted, Alaska Statute 16.40.210 prohibits "finfish farming", meaning that a "person may not grow or cultivate finfish in captivity or under positive control for commercial purposes". Enhancement of commercial salmon fisheries in Alaska occurs through production of hatchery fish that are released into natural waters of the state as juveniles, where they then feed on naturally available resources without artificial supplementation. In many cases, hatchery operators will assess the availability of zooplankton in the nearshore environment through "plankton tows" and other sampling methods. Information gained through these efforts is used to coordinate the timing of release for juvenile salmon to ensure adequate prey availability for high growth and survival, precluding any need for supplemental feeding after release.	
Evidence Basis: The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that regarding the enhanced components of the stock under consideration, provided that a natural reproductive stock component is maintained and fishery production is based primarily on natural biological production within the ecosystem of which the stock under consideration forms a part, enhanced fisheries meet the following criteria: (1) the species is native to the fishery's geographic area or introduced historically and has subsequently become established as part of the natural ecosystem, 2) there are natural reproductive components of the stock under consideration, and (3) the growth during the post-release phase is based upon food supply from the natural environment and the production system operates without supplemental feeding. Examples may include various regulations, data, and reports.	☑
EVIDENCE: The quality of evidence available to evaluate Supporting Clause 13.5 is strong and includes State statutes, policy statements, and agency reports, as cited above and elsewhere in this report.	
References:	See citations in evidence

³⁸⁴ <https://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesOtherInfo.reports>

³⁸⁵ http://www.adfg.alaska.gov/index.cfm?adfg=wildlifefews.view_article&articles_id=123

13.5.	Regarding the enhanced components of the <i>stock under consideration</i> , when a natural reproductive stock component is maintained and fishery production is based primarily on natural biological production within the ecosystem of which the <i>stock under consideration</i> forms a part, enhanced fisheries shall meet the following criteria: (1) the species shall be native to the fishery's geographic area or introduced historically and have subsequently become established as part of the natural ecosystem, (2) there shall be natural reproductive components of the <i>stock under consideration</i> , and (3) the growth during the post-release phase shall be based upon food supply from the natural environment and the production system shall operate without supplemental feeding.				
Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	) x 3 = Overall score
	10			0	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)					High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)					Full Conformance
Non-conformance Number (if applicable):					--

9.5.2.8 Supporting Clause 13.6.

13.6.	In the case of enhanced fisheries, the <i>stock under consideration</i> may comprise naturally reproductive components and components maintained by released from an enhancement facility. To avoid significant negative impacts of fishery enhancement activities on the natural reproductive components of the <i>stock under consideration</i> , the following shall apply: (1) naturally reproductive components of enhanced stocks shall not be overfished, and (2) naturally reproductive components of the stock under consideration shall not be displaced by enhanced components, and (3) in particular, displacement shall not result in a reduction of the stock under consideration below abundance-based target reference points (or their proxies) defined for the regulation of harvest.				
Relevance:	Relevant				
Evaluation Parameters					Met?
Process: There is a process in place to manage the naturally reproductive and enhanced components of the stock under consideration, to avoid significant negative impacts of enhancement activities on the naturally reproductive components (e.g., overfishing or displacement).					☒
EVIDENCE: Alaska's Policy for Management of Sustainable Salmon Fisheries states that "salmon fisheries shall be managed to allow escapements within ranges necessary to conserve and sustain potential salmon production and maintain normal ecosystem functioning". In concert with this overarching policy, Alaska's Policy for Statewide Salmon Escapement Goals (AS 16.05.251) tasks ADFG and the Board of Fisheries with the responsibility to conserve and develop Alaska's salmon fisheries on the sustained yield principle, codified in the State's Constitution, and to establish escapement goals for individual or aggregate populations, as can be reasonably enumerated by ADFG. Together, these policies provide a regulatory framework to ensure that naturally spawning population of salmon are not overharvested by commercial and other fisheries in Alaska. Pacific salmon have a natural propensity to return to their natal waters as they approach reproductive maturity. In the case of hatchery-reared salmon, adult tend to return to their site of release (often the hatchery, itself) in preparation to spawn. By requiring hatcheries to be situated away from major wild salmon populations, regulatory policies in Alaska have harnessed the innate "homing" behavior of hatchery salmon in a manner that protects wild stocks from displacement on spawning grounds and allows fisheries managers to direct harvest effort toward "terminal fisheries" in the vicinity of hatchery release sites, where hatchery-origin fish comprise the majority of the catch. Policies and regulations pertinent to protection of wild fish from overfishing or displacement by hatchery fish include: 5 Alaska Administrative Code 40.005, which states: "Where hatchery returns enter a segregated location near the release site and can be harvested without significantly affecting wild stocks, a special harvest area may be designated by regulation adopted by the board, within the hatchery permit, or by emergency orders issued by the commissioner."					

13.6. In the case of enhanced fisheries, the *stock under consideration* may comprise naturally reproductive components and components maintained by released from an enhancement facility. To avoid significant negative impacts of fishery enhancement activities on the natural reproductive components of the *stock under consideration*, the following shall apply: (1) naturally reproductive components of enhanced stocks shall not be overfished, and (2) naturally reproductive components of the stock under consideration shall not be displaced by enhanced components, and (3) in particular, displacement shall not result in a reduction of the stock under consideration below abundance-based target reference points (or their proxies) defined for the regulation of harvest.

Alaska Statute 16.10.400 Permits for Salmon Hatcheries, which states: Except for permits issued before June 16, 1976, a permit may not be issued for construction or operation of a hatchery on an anadromous fish stream unless the stream has been classified as suitable for enhancement purposes by the commissioner. The commissioner shall undertake to make such classifications in conjunction with the development of the comprehensive plan under AS 16.10.375; and During the development of a comprehensive plan for a region a permit may not be issued for a hatchery unless the commissioner determines that the action would result in substantial public benefits and would not jeopardize natural stocks.

Alaska Statute 16.10.420 Conditions of a [Hatchery] Permit “a hatchery be located in an area where a reasonable segregation from natural stocks occurs, but, when feasible, in an area where returning hatchery fish will pass through traditional salmon fisheries.”

Policy for the Management of Sustainable Salmon Fisheries, which states: “wild salmon stocks and the salmon's habitats should be maintained at levels of resource productivity that assure sustained yields.”

ADFG has engaged in several research projects to evaluate the stray rates and abundance of hatchery-origin salmon on natural spawning grounds. These studies take advantage of the mass otolith marking practices used by most hatcheries in Alaska to discriminate between hatchery and wild fish on spawning grounds. A common finding among these studies has been that the proportion of hatchery fish on spawning grounds tends to decrease with distance from the nearest hatchery.

Low levels of straying by hatchery Pink and Chum Salmon across broad areas with a greater incidence in some areas of proximity to hatcheries (Knudsen et al. 2015a, 2015b, 2016, 2021; Josephson et al. 2021). Significant straying of Chinook, Coho and Sockeye hatchery salmon has not been observed and enhancement levels are relatively modest in relation to wild abundance. The highest stray proportions are observed near hatcheries and along migratory pathways (Templin 2024). Hatchery strays typically comprised small proportions of total spawning escapements of all species even in regions where large production programs occur and spawning escapement goals are generally being achieved for wild populations.

Results from these studies, when taken in context with Alaska statutes and policies that direct siting of hatcheries away from streams with major natural salmon production, suggest that hatchery-produced salmon do not threaten to displace major wild-spawning salmon populations in Alaska. Moreover, difference in spawn-timing, fitness and other traits can serve to isolate and protect wild salmon populations from hatchery fish even amid relatively high stray rates (McConnell et al. 2018).³⁸⁶

Current status/Appropriateness/Effectiveness:

*There is evidence to demonstrate that the naturally reproductive components of stock under consideration are not overfished*³⁸⁷.



EVIDENCE:

In accordance with state policy, salmon fisheries in Alaska are managed to protect wild stocks and meet adult escapement goals. Hatchery and wild contributions to annual harvest in various commercial salmon fisheries are estimated and published by ADFG.³⁸⁸ Annually-produced escapement estimates³⁸⁹ provide the best measure of wild stock abundance in the face of harvest. Where stocks have chronically failed to meet escapement goals, they have been recognized as stocks of concern³⁹⁰ and awarded protections from harvest. In most cases, currently recognized stocks of concern are wild Chinook salmon populations that are now significantly protected from harvest through major reductions on harvest, as with, for example, Chilkat and King Salmon River stocks.³⁹¹

³⁸⁶ McConnell et al., (2018) <https://www.int-res.com/articles/aei2018/10/q010p099.pdf>

³⁸⁷ See overfishing definition for salmon in Appendix 1 of Guidance to Performance Evaluation for the Certification of Wild Capture and Enhanced Fisheries in Alaska Version 2.0 May 2018.

³⁸⁸ <http://www.adfg.alaska.gov/FedAidPDFs/RIR.5J.2019.01.pdf>

³⁸⁹ <http://www.adfg.alaska.gov/FedAidPDFs/FMS18-04.pdf>

³⁹⁰ <https://www.adfg.alaska.gov/index.cfm?adfg=specialstatus.akfishstocks>

³⁹¹ <http://www.adfg.alaska.gov/FedAidPDFs/RIR.1J.2018.05.pdf>

13.6. In the case of enhanced fisheries, the *stock under consideration* may comprise naturally reproductive components and components maintained by released from an enhancement facility. To avoid significant negative impacts of fishery enhancement activities on the natural reproductive components of the *stock under consideration*, the following shall apply: (1) naturally reproductive components of enhanced stocks shall not be overfished, and (2) naturally reproductive components of the stock under consideration shall not be displaced by enhanced components, and (3) in particular, displacement shall not result in a reduction of the stock under consideration below abundance-based target reference points (or their proxies) defined for the regulation of harvest.

Research, conducted by ADFG, non-governmental organizations and other partners, is applied to evaluate the contribution of hatchery salmon to adult escapement on many streams in Alaska. Findings from this research does not suggest that hatchery fish have displaced significant wild populations, though hatchery fish can be found in high abundance in some places, often in proximity to hatchery release sites.

Assessments of genetic stock structure, straying and relative reproductive success of hatchery fish indicate that while hatchery enhancement might produce local population-level effects of a limited nature, impacts did not appreciably affect stock diversity, abundance or productivity at the UoA scale. Wild salmon comprised the large majority of spawning escapements in all regions and escapement goals were consistently met independent of the contributions of hatchery salmon. While relative reproductive success of hatchery salmon was less than that of wild salmon, wild stocks continue to sustain high levels of natural production. Substantial genetic stock structure has been identified in all salmon species which could be impact if hatchery-wild interactions were significant. Divergence among populations was relatively shallow for Pink salmon (Cheng et al. 2016, 2019, 2022; Jasper et. al. 2013) and most substantial for Sockeye Salmon (Quinn et al. 2012; with Chum Salmon in between (Gilk-Baumer & Templin 2019; Barclay et al. 2024). Significant genetic population structure remains despite long-term hatchery programs and populations remain similar over time although there is some indication of introgression of hatchery strays (Templin 2024).

Southeast Alaska – Escapement goals have been set for all eight chum salmon stocks and goals are generally met when productivity is at least average (Munro 2023). Seven of the 8 stocks can be said to be reasonably healthy considering that productivity is highly variable.

Prince William Sound – Status of wild Pink salmon stocks is based on counts from aerial surveys in 134 streams were selected from across PWS based on these streams having a high proportion of the overall escapement for pink and chum salmon in historical surveys in 214 index streams (Morella et al. 2024). Spawning escapements goals have been consistently met or exceeded since 2000 for Pink salmon throughout PWS including both even and odd year brood cycles. This includes districts with (Eastern, Northern, Southwestern) and without (Montague, Southeastern) significant Pink salmon hatchery programs. Consistently large escapements of natural-origin Pink salmon documented in PWS streams indicate that natural production remains high in streams where hatchery strays are documented at low levels. Three of the four highest wild returns of Pink salmon to Prince William Sound on record have occurred in the last 10 years (Americus et al. 2022b).

Lower Cook Inlet – Pink salmon index streams consistently met their escapement goals despite some incidence of hatchery strays, and increased harvest effort on hatchery Pink salmon (Otis et al. 2018; Otis & Hollowell 2019; 2022, 2023; Munro & Brenner 2022). The effective use of terminal hatchery release sites and fisheries (Otis & Hollowell 2023) substantially reduces the potential for straying by LCI hatchery Pink Chinook and risks of overharvest of wild fish in hatchery-enhanced fisheries. Wild fish continue to account for most of the spawning escapements. Natural production remains high in streams where hatchery strays are documented at low levels. Catch sampling of hatchery cost recovery fisheries in Lower Cook Inlet determined that over 95% of the harvest in these terminal fishing areas was comprised of hatchery-origin fish.

Kodiak – Escapement goals established to provide sustained or maximum sustained yields of salmon are consistently met or exceeded on Kodiak from 2007-2021 for chum salmon (100% of years), coho salmon (96%), pink salmon (97%) and sockeye salmon (94%) (Munro 2023).

Current status/Appropriateness/Effectiveness:

There is evidence to support that the naturally reproductive components of stock under consideration are not displaced (i.e. spatially and geographically) by enhanced components (and in particular, do not result in a reduction of the natural reproductive component of the stock under consideration below abundance-based target reference points or their proxies as defined for the regulation of harvest (e.g., escapement goals).



EVIDENCE:

Southeast Alaska – Southeast Alaska hatcheries released 607 million Chum Salmon from 12 hatcheries at 26 locations in 2023 including on facility and remote release sites (Wilson 2024). A series of assessments have identified widespread straying of hatchery

13.6. In the case of enhanced fisheries, the *stock under consideration* may comprise naturally reproductive components and components maintained by released from an enhancement facility. To avoid significant negative impacts of fishery enhancement activities on the natural reproductive components of the *stock under consideration*, the following shall apply: (1) naturally reproductive components of enhanced stocks shall not be overfished, and (2) naturally reproductive components of the stock under consideration shall not be displaced by enhanced components, and (3) in particular, displacement shall not result in a reduction of the stock under consideration below abundance-based target reference points (or their proxies) defined for the regulation of harvest.

Chum Salmon into natural production areas throughout Southeast Alaska at a relatively low rate in most natural production areas with higher rates in certain areas proximal to hatchery release sites.

Piston & Heintz (2012a, 2012b) collected otoliths from chum salmon at wild stock index streams throughout Southeast Alaska from 2008 to 2011 to document the presence and distribution of stray hatchery fish. In 2008-2010, the proportion of hatchery fish was greater than 5% in 21 of 33 index streams: 2 of 5 in the SSE Subregion, 1 of 5 in NSEO Subregion, and 18 of 23 in the NSEI Subregion. The overall estimated proportion of hatchery fish in the NSEI Subregion escapement index was 13.5% (80% CI=12.5%–14.4%) in 2010 and 9.8% (95% CI=8.9%–10.7%) in 2011. The estimated overall proportion of hatchery strays in the NSEO Subregion was less than 2% in all study years. The proportion of hatchery strays in all samples collected from 2008 to 2011 decreased as distance from release sites increased and the proportions were generally highest at streams located within 50 km of the nearest hatchery release site. Considerable year-to-year variation in the proportion of hatchery fish in five of eight streams that had been sampled in prior years. Based on the relatively low observed proportions of hatchery strays, Piston & Heintz (2012b) reported that modification of summer chum salmon escapement indices to account hatchery straying for the would result in little or no change to current escapement goals.

Proportions of hatchery summer run Chum Salmon in Southeast Alaska spawning escapements were assessed in 2013-2015 as part of the Alaska Hatchery Research Project (Josephson et al. 2021). This assessment used a weighting scheme and a method to produce estimates representative of the SMUs and the region. Average annual proportions ranged from 0.016 to 0.081 in the three southeast Alaska management areas and 0.032 to 0.060 across Southeast Alaska. The proportion of hatchery strays decreased as the distance from hatchery release sites increased with the highest proportions in streams located within 50 km of the nearest release site. In 10 streams sampled from 2013-2015, 77% of annual observations counted less than 5% contribution of hatchery-origin strays in natural spawning areas. However, small numbers of stray hatchery fish were observed in many streams - PHOS was 1% or less in only 23% of annual observations. Hatchery production of Chum Salmon in Southeast Alaska is predominately of the summer run while a substantial portion the natural production of Chum salmon is of the fall run (Piston & Heintz 2020). Thus, estimates of hatchery proportions in the aggregate Southeast Alaska Chum stock are substantially less than those based on summer Chum populations alone.

Prince William Sound - In 2023, there were 889 million juvenile salmon released in the Prince William Sound area: 739 million pink, 132 million chum, 13 million sockeye, 4 million coho, and 223 thousand Chinook salmon (Wilson 2024). Building on prior assessments, the Alaska Hatchery Research Project has provided extensive information on genetic stock structure, straying and relative fitness in relation to hatchery enhancement in PWS (ADF&G 2018, 2022; Americus et al. 2022b, 2025).

Genetic stock structure of Pink salmon exists but divergence among populations is relatively shallow (Cheng et al. 2016, 2019, 2022; Jasper et al. 2013). Higher levels of divergence were identified for Chum Salmon (Gilk-Baumer & Templin 2019; Barclay et al. 2024). Genetic introgression from the hatchery population into wild stocks has previously been identified for Chum Salmon in PWS but the impact is unclear (Jasper et al. 2013).

Knudsen et al. (2021) estimated annual proportions of hatchery fish in the preharvest run ranged from 0.55 to 0.86 for Pink salmon and from 0.51 to 0.73 for Chum Salmon. Commercial fisheries harvested 94–99% of hatchery-origin fish of both species, 27–50% of natural-origin Pink salmon and 17–20% of natural-origin Chum Salmon. Proportions of hatchery fish across all sampled PWS spawning streams were much lower, ranging from 0.05 to 0.15 for Pink salmon and from 0.03 to 0.09 for Chum Salmon. In both species, relatively high instream proportions of hatchery fish tended to be geographically localized, while many streams exhibited low proportions. Of the 27 Pink salmon streams sampled annually from 2013-2015, hatchery-origin strays in natural spawning areas accounted for <5% in 44% of observations and <1% in 20% of observations. Of the 17 Chum Salmon streams sampled annually from 2013-2015, 70% of observations counted less than 5% hatchery contribution and 26% counted less than 1%.

Straying of Prince William Sound hatchery Pink salmon is not limited to Prince William Sound streams. Stray hatchery Pinks have also been identified in Lower Cook Inlet and Kodiak streams in recent years. Some Lower Cook Inlet streams contained unexpectedly high percentages of Pink salmon originating from hatcheries in Prince William Sound ranging from 1 to 70% in 2014-2017 (Otis et al. 2018; Otis & Hollowell 2019). The overall average for the study years was 24%. PWS hatchery Pink salmon were documented in many

13.6. In the case of enhanced fisheries, the stock under consideration may comprise naturally reproductive components and components maintained by released from an enhancement facility. To avoid significant negative impacts of fishery enhancement activities on the natural reproductive components of the stock under consideration, the following shall apply: (1) naturally reproductive components of enhanced stocks shall not be overfished, and (2) naturally reproductive components of the stock under consideration shall not be displaced by enhanced components, and (3) in particular, displacement shall not result in a reduction of the stock under consideration below abundance-based target reference points (or their proxies) defined for the regulation of harvest.

sample rivers on Kodiak and Afognak in 2020 and 2021 (Weber 2021, 2022). A low incidence of non-local hatchery Chum Salmon was also documented in Kodiak area streams.

Initial studies found that relative reproductive success (RRS) of Pink salmon was significantly lower for hatchery-origin relative to natural origin fish, ranging from 0.03 to 0.47 for females and 0.05 to 0.86 for males in two Prince William Sound streams (Lescake & Dann 2019; Lescak et al. 2019; Shedd et al. 2022). Assessments of RRS of both Pink and Chum Salmon are ongoing. The implications of reduced RRS on wild productivity remain to be determined and will depend on whether the mechanisms underlying reduced RRS are environmentally driven, and likely ephemeral, or genetically driven, and likely persistent across generations (Shedd et al. 2022). McMahon et al. (2025) identified significant body size and run timing differences between hatchery and wild Pink salmon spawners in Prince William Sound and reduced variation in traits in hatchery fish. Differences were thought likely to be driven by competitive differences during maturation and broodstock selection practices. This study also suggested that local adaptation may be maintained by phenotypic sorting despite widespread domestication impacts. Quantitative genetic modelling based on Prince William Sound Pink salmon identified the potential for long-term demographic and evolutionary consequences arising from specific hatchery-wild interactions due to reduced fitness of hatchery fish due to rapid assimilation of hatchery-origin alleles can rapidly, despite the reduced fitness of hatchery fish attributable to phenotypic mismatches (May et al. 2024). However, Cheng et al. (2022) reported that stratified mating may be responsible for the wild-type population structure that has endured in Prince William Sound pink salmon despite over 25 generations of hatchery releases.

Lower Cook Inlet - Stray rates of hatchery Pink salmon have been estimated in LCI streams based on otolith marks from spawned-out carcasses annually in 2014-2017 (Otis et al. 2018, 2020, 2021, 2022, 2023; Otis & Hollowell 2019). Hatchery-origin Pink salmon from LCI programs were reported in all 17 sample populations with contributions ranging from 2% to 93% (Figure 24). Hatchery contributions varied substantially among streams and across years. Contributions from LCI hatcheries were much lower in streams that were not in direct proximity to hatchery release sites averaging just 3% and ranging from 0 to 7%. Of the 17 sample streams, 59% averaged less than 5% contribution of LCI hatchery-origin strays in natural spawning areas in 2014-2017. Significant contributions of Prince William Sound hatchery Pink salmon were widely observed in LCI streams.

Kodiak - With the advent of full otolith sampling of Pink and Chum Salmon, an annual assessment project was initiated in 2020 to estimate hatchery contributions to the hatchery return, fishery harvest and in selected rivers on NE Kodiak and Afognak Islands. Analyses have found limited contributions of KRAA hatchery Pink salmon to fisheries outside the area of the hatchery (Weber 2021, 2022). Marks from other Alaska Pink salmon hatcheries were also documented in the fisheries. In 2020, Pink salmon otoliths were collected from six rivers on Kodiak and Afognak Islands of which 80% were unmarked, 2% were from Kitoi Hatchery, and 15% were from Alaska hatcheries outside of Kodiak (Weber 2021). In 2021, Pink salmon otoliths were collected from seven rivers on Kodiak and Afognak Islands of which 44% were unmarked, 19% were from Kitoi Hatchery, and 36% were from Alaska hatcheries outside of Kodiak (Weber 2022). In 2020, Chum salmon otoliths were collected from four rivers on Kodiak and Afognak Islands of which 98% were unmarked, 1% were from Kitoi hatchery, and 1% were from Alaska hatcheries outside of Kodiak (Weber 2021). In 2021, Chum salmon otoliths were collected from four rivers on Kodiak and Afognak Islands of which 97% were unmarked, 0% were from Kitoi hatchery, and 3% were from Alaska hatcheries outside of Kodiak (Weber 2022).

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that in the case of enhanced fisheries, the stock under consideration may comprise naturally reproductive and enhanced components. In the context of avoiding significant negative impacts of enhancement activities on the natural reproductive components of stock under consideration, the following apply: (1) naturally reproductive components of the stock under consideration are not overfished, (2) naturally reproductive components of the stock under consideration are not substantially displaced by enhanced components, and (3) in particular, displacement does not result in a reduction of the natural reproductive component of the stock under consideration below abundance-based target reference points (or their proxies) defined for the regulation of harvest. Examples may include various regulations, data, and reports.



13.6. In the case of enhanced fisheries, the *stock under consideration* may comprise naturally reproductive components and components maintained by released from an enhancement facility. To avoid significant negative impacts of fishery enhancement activities on the natural reproductive components of the *stock under consideration*, the following shall apply: (1) naturally reproductive components of enhanced stocks shall not be overfished, and (2) naturally reproductive components of the stock under consideration shall not be displaced by enhanced components, and (3) in particular, displacement shall not result in a reduction of the stock under consideration below abundance-based target reference points (or their proxies) defined for the regulation of harvest.

EVIDENCE:

State statutes and policy mandates ensure that wild salmon stocks that spawn in Alaska are not overfished. As cited above, escapement goals, estimates from population monitoring efforts and conservation measures to protect stocks of concern all provide sound and transparent evidence supporting an effective management strategy. Hatchery permitting requirements include stipulations that limit potentially detrimental ecological and genetic risk from hatchery salmon to wild populations, primarily through siting of facilities in areas without major natural production. These policies are publicly available and their implementation is transparent and subject to public hearings pursuant to Alaska Statute 16.10.410. A convenient overview of much information mentioned here is available at: <https://www.adfg.alaska.gov/static/fishing/PDFs/hatcheries/mcgee brochure.pdf>

References: See citations in evidence

Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10

Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)

High

Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)

Full Conformance

Non-conformance Number (if applicable):

9.5.2.9 Supporting Clause 13.7.

13.7. Any modification to the habitat for enhancing the stock under consideration is reversible and does not cause serious or irreversible harm to the natural ecosystem's structure and function.

Relevance: Relevant

Evaluation Parameters

Met?

Process:

There is a system that allows for the prevention or reversing of habitat modifications that may cause serious or irreversible harm to the natural ecosystem's structure and function.



EVIDENCE:

State administrated permitting of hatcheries in Alaska involves a careful review process that considers siting of construction and any potential impacts to habitat and the ecosystem. Moreover, Alaska Statute 16.10.400 states that "a permit may not be issued for construction or operation of a hatchery on an anadromous fish stream unless the stream has been classified as suitable for enhancement purposes by the commissioner".

Beyond construction, salmon hatcheries in Alaska are subject to regular inspections by ADFG and other regulatory agencies that ensure compliance with permit, policy, biological and environmental standards. Alaska Statute 16.10.460 states that, (a) As a condition of and in consideration for a permit to operate a hatchery under AS 16.10.400 - 16.10.470, an inspection of the hatchery facility by department inspectors shall be permitted by the permit holder at any time the hatchery is operating. The inspection shall be conducted in a reasonable manner.

Enhancement programs have also historically fertilized a number of small nutrient-limited lakes to increase salmon productivity. These efforts have largely been terminated except in a few specific cases.

Current status/Appropriateness/Effectiveness:



13.7. Any modification to the habitat for enhancing the stock under consideration is reversible and does not cause serious or irreversible harm to the natural ecosystem's structure and function.

There is evidence that are none, or minimal habitat modifications and that these modifications to the habitat for enhancing the stock under consideration are reversible and cause none to insignificant harm to the natural ecosystem's structure and function. Reversibility refers to the effects of a process or condition capable of being reversed so that the previous state is restored.

EVIDENCE:

State, federal and private oversight of salmon hatcheries in Alaska serve to assess, prevent and mitigate potentially negative impacts to the structure and function of surrounding ecosystems.

Recent examples include an environmental assessment of proposed modifications to the Main Bay Hatchery facility, owned by ADFG and operated by PWSAC, where permit renewal and site improvements were deemed to have lesser environmental impacts than "no action" options.³⁹² Today, hatchery staff actively help to control invasive plant species near the facility, while continuing to produce Coghill Lake stock sockeye salmon to support commercial salmon fisheries.

Where hatcheries or other developments do impact natural ecosystems in Alaska, urgent mitigation, restoration and habitat improvement projects have been implemented in response. Such actions are typically undertaken by governmental and non-governmental organizations, alike. As example, in November of 2019, a cracked pipe at the Kitoi Bay Hatchery began to spill oil near a small creek and into the coastal water. Within hours, hatchery staff noticed the leak, repaired the pipe and began working with the Alaska Department of Environmental Conservation to clean up the spill.³⁹³ Impacts from this spill are expected to be limited in scope and duration. In some cases, restoration projects are intended to increase salmon production in areas where they occur, but also serve to restore or otherwise improve ecosystem structure and function. ADFG actively promotes habitat restoration,³⁹⁴ in part through its collaborative Habitat Restoration and Protection Cost Share Program.³⁹⁵ This program started in 1995, originally on the Kenai River, but expanded to include Fairbanks and the Matanuska-Susitna Valley in 2007, and Anchorage in 2011. Since its inception, more than 721 projects have been completed: 669 projects on the Kenai River, 28 projects in the Matanuska-Susitna Valley, 17 projects in Fairbanks and seven projects in Anchorage. These projects have removed 5,586 feet of detrimental structures; conserved 47,054 feet of habitat through the installation of light penetrating gratewalks, cabled spruce trees and exclusion fencing; rehabilitated 16,273 feet of fragile riparian and bank habitats; for a grand total of 63,327 feet of improved fish friendly habitat in Alaska.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that modifications to the habitat for enhancing the stock under consideration are reversible and do not cause serious or irreversible harm to the natural ecosystem's structure and function. Examples may include various regulations, data, and assessment reports.


EVIDENCE:

Existing regulatory mechanisms and state authored hatchery evaluation reports provide compelling evidence that hatcheries in Alaska do not inflict irreversible harm to ecosystem structure and function. ADFG hatchery evaluation reports are available online at: <https://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesOtherInfo.reports>

References: See citations in evidence

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)									High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)									Full Conformance
Non-conformance Number (if applicable):									--

³⁹² https://www.fs.usda.gov/nfs/11558/www/nepa/91621_FSPLT3_3985722.pdf

³⁹³ <https://kmxt.org/2019/11/cleanup-in-progress-for-1200-gallon-oil-spill-at-kitoi-bay-hatchery/>

³⁹⁴ <https://www.adfg.alaska.gov/index.cfm?adfg=habitatrestoration.main>

³⁹⁵ http://www.adfg.alaska.gov/index.cfm?adfg=wildlifeneews.view_article&articles_id=743

9.5.2.10 Supporting Clause 13.7.1.

13.7.1	Efforts shall be undertaken to minimize the adverse impacts of introducing non-native species or genetically altered stocks used for aquaculture into waters.		
Relevance:	Relevant		
Evaluation Parameters			
Process: <i>There is a process to manage introduction of non-native species or genetically altered stocks used for aquaculture. Please note that In Alaska no non-native species are permitted to enter into the state for any purpose, especially not for use in fish culture.</i>			☒
EVIDENCE: The introduction of non-native species into Alaska is strictly regulated and generally prohibited. According to ADFG: ³⁹⁶ - Without a permit no person may transport, possess, export from the state, or release into the waters of the state, any live fish unless the person holds a fish transport permit. Ornamental fish may be possessed but may not be released into waters of the state. - Without a permit no person may import any live fish into the state for purposes of stocking or rearing in the waters of the state. - The Board of Fisheries may adopt regulations it considers advisable for prohibiting and regulating the live capture, possession, transport, or release of native or exotic fish or their eggs. With respect to salmon, the State Finfish Genetics policy provides clear regulatory guidance by stating: Live salmonids, including gametes, will not be imported from sources outside the state. Exceptions may be allowed for transboundary rivers.			
Current status/Appropriateness/Effectiveness: <i>Efforts are made to minimize recognized harmful issues or effects, and these efforts are considered effective. In terms of effective efforts to minimize the potential adverse impacts of genetically altered stocks on wild stocks, the assessment team shall ensure evaluation of the overall enhancement system including policies, plans, objectives, measures, and management practices.</i>			☒
EVIDENCE: Policy and permitting processes generally prohibit the introduction of non-native species into Alaska, and no evidence suggests that non-native species are used in the production of hatchery salmon in the state.			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that efforts are undertaken to minimize the harmful effects of introducing non-native species or genetically altered stocks used for aquaculture (including culture-based fisheries). Examples may include various regulations, data, and reports.</i>			☒
EVIDENCE: Clear regulatory mechanisms exist to prevent the introduction of non-native fish for the purposes of hatchery production in Alaska.			
References:	See citations in evidence		
Numerical score:	Starting score 10	- (Number of EPs <u>NOT</u> met 0	x 3) = Overall score 10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			Full Conformance
Non-conformance Number (if applicable):			

³⁹⁶ <https://www.adfg.alaska.gov/index.cfm?adfg=invasive.regulations>

9.5.2.11 Supporting Clause 13.7.2

13.7.2	Steps shall be taken to minimize adverse genetic, disease, and other effects of escaped farmed fish (aquaculture) on wild stocks.				
Relevance:	Relevant				
Evaluation Parameters			Met?		
Process: <i>There is a process capable to deal with adverse genetic effects, disease, and other adverse impacts of farmed fish on wild stocks. Please note this clause addresses farmed fish originating from outside Alaska (e.g., Canada or Russia) and its potential effects on Alaska wild stocks.</i>			☒		
EVIDENCE: Full-lifecycle rearing of salmon (and other finfish) for commercial purposes is strictly prohibited in Alaska by statute 16.40.210, which states, "A person may not grow or cultivate finfish in captivity or under positive control for commercial purposes", with exceptions provided by Department administrated rehabilitation projects, salmon hatcheries that mandatorily release fish into open waters ("sea ranching") and the ornamental aquarium fish trade. With further regard to salmon hatcheries, ADFG's Finfish Genetic Policy directs that salmon produced by hatcheries in Alaska be derived from native stocks, not transplanted across great distances or state boundaries, produced in a manner that best conserves intra-population genetic diversity and managed to limit interactions with wild stocks. Potentially negative effects from escaped farm fish that could originate outside of Alaska are managed by ADFG's Invasive Species Program.³⁹⁷ This program promotes prevention and reporting of non-native species introductions, using public outreach, education and online reporting to limit harmful introductions.					
Current status/Appropriateness/Effectiveness: <i>The management measures in place are effective in minimizing adverse genetic effects, disease, and other adverse impacts of escaped farmed fish on wild stocks.</i>			☒		
EVIDENCE: State law and policy prohibit full lifecycle aquaculture in Alaska, as cited above. These measures prevent, to the extent possible, negative impacts from farmed fish. Introductions of exotic and farmed fish stocks, intentional or inadvertent, is prohibited in Alaska and managed by ADFG's Invasive Species Program.					
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that steps are taken to minimize adverse genetic effects, disease, and other adverse impacts of escaped farmed fish on wild stocks. Examples may include various regulations, data, and reports.</i>			☒		
EVIDENCE: Alaska's Finfish Genetics Policy and Fish Health and Disease Control Policy serve as guiding management documents to minimize genetic, disease and other risks to wild salmon populations from fisheries enhancement activities (i.e. hatchery operations) which are not, by definition, "farmed fish". Escape of farmed fish from regions outside Alaska into state waters can be reported through ADFG's Invasive Species Program, facilitating prompt recording and mitigation.³⁹⁸					
References:	See citations in evidence				
Numerical score:	Starting score	- (	Number of EPs <u>NOT</u> met	x 3) =	Overall score
	10	-	(	0	x 3) = 10

³⁹⁷ <http://www.adfg.alaska.gov/index.cfm?adfg=invasive.main>

³⁹⁸ <http://www.adfg.alaska.gov/index.cfm?adfg=invasive.report>

13.7.2	Steps shall be taken to minimize adverse genetic, disease, and other effects of escaped farmed fish (aquaculture) on wild stocks.	
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)		High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)		Full Conformance
Non-conformance Number (if applicable):		

9.5.2.12 Supporting Clause 13.7.3.

13.7.3	Research shall be promoted to develop enhancement techniques for endangered species to protect, rehabilitate, and increase their stocks, taking into account the critical need to conserve their genetic diversity.		
Relevance:	Not relevant. Not applicable where fishery enhancement activities are not geared towards ETP species rehabilitation. No stocks of salmon propagated by hatcheries in Alaska are recognized as endangered or threatened.		
Evaluation Parameters			Met?
Process: <i>There is a process in place to recognize if the fishery in question is composed of one or ETP species in need of rehabilitation.</i>			☐
EVIDENCE:			
Current status/Appropriateness/Effectiveness: <i>Research into rehabilitation techniques for ETP species and the conservation of genetic diversity is being promoted. The research has taken into account the critical need to conserve genetic diversity of ETP species.</i>			☐
EVIDENCE:			
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that research is promoted to develop enhancement techniques for ETP species to protect, rehabilitate, and increase their stocks, taking into account the critical need to conserve genetic diversity of ETP species. Examples may include various regulations, data, and reports.</i>			☐
EVIDENCE:			
References:			
Numerical score:	Starting score 10	– (Number of EPs <u>NOT</u> met x 3) =	Overall score NA
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)			
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)			
Non-conformance Number (if applicable):			

9.5.2.13 Supporting Clause 13.8.

13.8	The fishery management organization shall protect transboundary aquatic ecosystems by supporting responsible enhanced fishery practices within the States jurisdiction and cooperating to promote sustainable enhanced fishery practices.		
Relevance:	Relevant		
Evaluation Parameters			
			Met?

13.8	The fishery management organization shall protect transboundary aquatic ecosystems by supporting responsible enhanced fishery practices within the States jurisdiction and cooperating to promote sustainable enhanced fishery practices.
Process:	<i>Management measures are in place to support sustainable enhanced fishery practices and these are in accord with international practices.</i> ☒
EVIDENCE:	The Pacific Salmon Treaty³⁹⁹ has been in effect since 1985 and provides clear policy direction for the responsible management of salmon fisheries and related fishery enhancement activities along transboundary rivers of Alaska and Canada.
Current status/Appropriateness/Effectiveness:	<i>These measures are effective in promoting a States sustainable enhanced fishery practices.</i> ☒
EVIDENCE:	In 1985, the United States and Canada ratified the Pacific Salmon Treaty, of which Article VII states: 1. This Article applies to salmon originating in transboundary rivers. 2. Notwithstanding Article IV, paragraph 3(c), whenever salmon originate in the Canadian portion of a transboundary river, the appropriate Panel shall provide its views to the Commission on the spawning escapement to be provided for all the salmon stocks of the river if either section of the Panel so requests. 3. On the basis of the views provided by the Panel pursuant to paragraph 2, the Commission shall recommend spawning escapements to the Parties. 4. Whenever salmon originate in the Canadian portions of transboundary rivers, or would originate there as a result of enhancement projects, salmon enhancement projects on the transboundary river shall be undertaken co-operatively, provided, however, that either Party, with the consent of the Commission, may separately undertaken salmon enhancement projects on the transboundary rivers. Chapter 1 of the Treaty continues, to say: 1. Recognizing the desirability of accurately determining exploitation rates and spawning escapement requirements of salmon originating in the Transboundary Rivers, the Parties shall maintain a joint Transboundary Technical Committee (the "Committee") reporting, unless otherwise agreed, to the Transboundary Panel and to the Commission. The Committee shall, inter alia: (a) assemble and refine available information on migratory patterns, extent of exploitation and spawning escapement requirements of the stocks; (b) examine past and current management regimes and recommend how they may be better suited to achieving escapement goals; (c) identify existing and/or future enhancement projects that: i. assist the devising of harvest management strategies to increase benefits to fishermen with a view to permitting additional salmon to return to Canadian waters; iv. have an impact on natural transboundary river salmon production In accordance with these principles, the Treaty further identifies cooperative actions to be taken to promote responsible fisheries management and enhancement practices by both Canada and the United States (namely Alaska) on key transboundary rivers.
Evidence Basis:	<i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization protects transboundary aquatic ecosystems by supporting responsible enhanced fishery practices within the States jurisdiction and cooperating to promote sustainable enhanced fishery aquaculture practices. Examples may include various regulations, data, and reports.</i> ☒

³⁹⁹ <https://www.psc.org/download/45/miscellaneous/2337/pacific-salmon-treaty.pdf>

13.8 The fishery management organization shall protect transboundary aquatic ecosystems by supporting responsible enhanced fishery practices within the States jurisdiction and cooperating to promote sustainable enhanced fishery practices.

EVIDENCE:

For 40 years, the Pacific Salmon Treaty has served as a foundation document and platform for international negotiations supporting the sustainable management of salmon, including stocks that inhabit transboundary waters. This accord continues to be increasingly relevant, as on May 3, 2019, the participating members implemented a new 10-year agreement for these fisheries that is now in force through 2028. In 2014, the Parties agreed to a revised approach for Fraser River sockeye and pink salmon that expires at the end of 2019. It is expected that the Fraser chapter will be renewed by January 1, 2020 for an extended period.

Testimonials from the negotiation process commented on the Treaty's focus on conservation and sustainability.⁴⁰⁰

"It was gratifying to know throughout the negotiations that conservation of coastwide salmon stocks was the highest priority of every commissioner," said NOAA Fisheries' Bob Turner, U.S. Commissioner and current Chair of the Commission.

"I'm pleased the Commission was able to bring forward this recommendation, and that the Parties were able to reach an agreement that we feel will support the conservation and long-term sustainability of this important resource" said Rebecca Reid, Canadian Vice-Chair of the Commission and Regional Director General, Fisheries and Oceans Canada, Pacific Region.

The continued success of the Pacific Salmon Treaty as a means to negotiate sustainable salmon stocks across state and international borders provides strong evidence of full conformance for Supporting Clause 13.8.

References: See citations in evidence

Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10

Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)

High

Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)

Full Conformance

Non-conformance Number (if applicable):

9.5.2.14 Supporting Clause 13.9.

13.9 The fishery management organization shall, with due respect to their neighboring States and in accordance with international law, ensure responsible choice of species, siting, and management of enhanced fisheries activities that could affect transboundary aquatic ecosystems.

Relevance: Relevant

Evaluation Parameters

Met?

Process:

Management measures are in place ensuring responsible choice of species, siting, and management of enhanced fishery activities, which could affect transboundary aquatic ecosystems.



EVIDENCE:

Choice of species, stock, hatchery siting and management of fisheries activities are regulated through Alaska Statutes 16.10.375 – 16.10.560, guided by Alaska's Policy for the Management of Sustainable Salmon Fisheries and subject to agreements of the Pacific Salmon Treaty (see Supporting Clause 13.8).

Current status/Appropriateness/Effectiveness:

There is evidence for the responsible States choice of species, sites, and management procedures. This is considered effective in minimizing potential risks to transboundary aquatic ecosystems.



⁴⁰⁰ https://archive.fisheries.noaa.gov/wcr/stories/2018/18_09172018_salmon_treaty_renewal.html

13.9 The fishery management organization shall, with due respect to their neighboring States and in accordance with international law, ensure responsible choice of species, siting, and management of enhanced fisheries activities that could affect transboundary aquatic ecosystems.

EVIDENCE:

The successful re-negotiation of the Pacific Salmon Treaty in 2019 lends credence to effective international management of transboundary salmon stocks that inhabit or migrate through the waters of Canada, Alaska and other Pacific states. Fisheries enhancement and other management agreements are included within this international treaty.

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization, with due respect to their neighboring States and in accordance with international law, ensures responsible choice of species, siting, and management of aquaculture activities which could affect transboundary aquatic ecosystems. Examples may include various regulations, data, and reports.



EVIDENCE:

The Pacific Salmon Treaty is publicly available at: <https://www.psc.org/download/45/miscellaneous/2337/pacific-salmon-treaty.pdf>

References: See citations in evidence

Numerical score:	Starting score	-	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					10

Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)

High

Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)

Full Conformance

Non-conformance Number (if applicable):

9.5.2.15 Supporting Clause 13.10.

13.10. The fishery management organization shall consult with their neighboring States, as appropriate, before introducing non-indigenous species into transboundary aquatic ecosystems.

Relevance: Relevant

Evaluation Parameters

Met?

Process:

There is a policy in place dictating the procedure to be followed prior to the introduction of non-indigenous species.



EVIDENCE:

Alaska has a blanket prohibition against introduction of non-indigenous species, or stocks of a species. The Alaska Finfish Genetics Policy prohibits the import on non-indigenous stocks, thereby precluding the release of non-indigenous salmon into transboundary waters. See Supporting Clause 13.7.1

Current status/Appropriateness/Effectiveness:

This policy includes a requirement that neighboring States be consulted prior to the introduction of a non-indigenous species into a transboundary area. If there is evidence that such an introduction has occurred in the past, there shall also be evidence that the policy has been followed.



EVIDENCE:

See Supporting Clause 13.7.1 and above

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization consults with their neighboring States, as appropriate, before introducing non-indigenous species into transboundary aquatic ecosystems. Examples may include various regulations, data, and reports.



13.10.	The fishery management organization shall consult with their neighboring States, as appropriate, before introducing non-indigenous species into transboundary aquatic ecosystems.							
EVIDENCE:								
See Supporting Clause 13.7.1 and above. Also, no known reports of non-indigenous species release into transboundary waters.								
References:	See citations in evidence							
Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x 3	)	=	Overall score
	10			0				10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)								High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)								Full Conformance
Non-conformance Number (if applicable):								

9.5.2.16 Supporting Clause 13.11.

13.11.	The fishery management organization shall establish appropriate mechanisms—such as databases and information networks to collect, share, and disseminate data related to their enhanced fishery activities—to facilitate cooperation on planning for enhanced fishery development at the States and international level.				
Relevance:	Relevant				
Evaluation Parameters					Met?
Process: <i>A publicly available database has been established.</i>					☒
EVIDENCE:					
Throughout their range, Pacific salmon are perhaps the most intensively studied group of free-ranging fishes that contribute to commercial fisheries. For decades, massive amounts of data have been collected for Chinook, coho, pink, chum and sockeye salmon, and these data have contributed to a variety of databases. ADFG and NOAA Fisheries have either established or contributed to databases that are used to archive, share and disseminate information related to salmon tags, genetics, otoliths, catch, pathology and more.					
By in large, these databases are freely accessible online, allowing researchers, managers and the general public access to valuable fisheries management information across much of the species' distribution, including Alaska. In some cases, such as for coded-wire tags, databases directly inform fisheries management and are used to satisfy international treaty obligations.					
Current status/Appropriateness/Effectiveness: <i>The information is disseminated properly and the database is available for public access to facilitate international cooperation.</i>					☒
EVIDENCE:					
Various databases have been developed to assist with the cooperative management of Pacific salmon throughout their range along the west coast of North America. These resources are used to store and disseminate data for:					
Coded-Wire Tags - Information on coded-wire tagged (CWT) salmon, throughout the Pacific region, is available in an on-line coastwide database, known as the Regional Mark Information System (RMIS). ⁴⁰¹ This database is maintained by the Regional Mark Processing Center (RMPC) ⁴⁰² of the Pacific States Marine Fisheries Commission to facilitate exchange of CWT data between release agencies, sampling/recovery agencies, and other data users. Information included in RMIS includes release information of hatchery salmon, such as date, location, and number of tagged fish released, as well as tag recovery information, such as recovery location, date, and fishery or method. This publicly accessible database is used widely by fisheries managers to estimate the performance and					

⁴⁰¹ <http://www.psmfc.org/rmpc/index.html>

⁴⁰² <https://www.rmpc.org/>

13.11.	The fishery management organization shall establish appropriate mechanisms—such as databases and information networks to collect, share, and disseminate data related to their enhanced fishery activities—to facilitate cooperation on planning for enhanced fishery development at the States and international level.

catch rate of various hatchery-produced salmon stocks throughout the Pacific Northwest, Canada and Alaska. ADFG's Tag Lab⁴⁰³ also curates its own CWT database, which is accessible through the internet to registered users at https://mtalab.adfg.alaska.gov/CWT/Reports-My_Taglab.aspx

Genetics –ADFG and NOAA Fisheries have contributed to a number of genetic databases that have been developed for Pacific salmon stocks. These databases are widely shared among researchers, contributing to informed management of both hatchery- and naturally-produced salmon, which can often be assigned to stock of origin through genetic identification without a need for tags or marks. Genetic analyses are performed by ADFG primarily through their Gene Conservation Laboratory⁴⁰⁴ in Anchorage, Alaska, while NOAA Fisheries conducts much of its genetic analyses of salmon in Alaska at its Auke Bay Laboratory.⁴⁰⁵ Shedd et al. (2018)⁴⁰⁶ recently reported on the development of an Alaskan sockeye salmon genetic baseline and its application in the management of mixed stock fisheries in the area surrounding Kodiak Island. Barclay et al. (2017)⁴⁰⁷ reported on the development and application of a genetic baseline for coho salmon, and numerous sources⁴⁰⁸ have reported on the development of the latest Chinook salmon genetic baseline, which will allow managers to assign unmarked salmon to their region and, in some cases, river of origin.

Otoliths – ADFG's Mark, Tag and Age Laboratory collects, stores and disseminates otolith mark data through its searchable and publicly accessible online database at <https://mtalab.adfg.alaska.gov/OTO/reports/VoucherSummary.aspx>. Information provided through this database serves to support the lab's goals to "provide fisheries managers and researchers with timely, current, and historical biological data to help them manage, preserve, protect, and perpetuate Alaska's fishery resources".

Catch – Catch data are generated, in part through analyses of genetic, CWT and otolith data. ADFG maintains a database of statistics and commercial harvest data⁴⁰⁹ that can be used to generate summary reports and other data-based information products.

Pathology – ADFG's Fish Pathology Laboratory⁴¹⁰ publishes resources on a wide range of maladies that can affect Pacific salmon, including diagnostic information for viruses, bacteria, helminths, arthropods and non-infectious diseases.⁴¹¹ This laboratory also uses a variety of databases and other resources to conduct diagnostic testing for disease to support the safe operation of salmon hatcheries in Alaska.

Hatchery Releases – A web-accessible database of salmon hatchery releases through the Pacific including Alaska is maintained by the North Pacific Anadromous Fish Commission.⁴¹²

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization has established appropriate mechanisms—such as databases and information networks to collect, share and disseminate data related to their enhanced fisheries activities—to facilitate cooperation on planning for enhanced fisheries development at the States international level. Examples may include various regulations, data, and reports.


EVIDENCE:

Numerous databases are used, developed by and curated by state and federal salmon fisheries managers, as well as interstate and international councils. These databases are, in most cases, publicly accessible through online resources and widely used in the cooperative management of Pacific salmon, including those stocks harvested by commercial fisheries in Alaska. Many reports describing the development and application of genetic, CWT, otolith and other databases are of high quality and easily obtained.

⁴⁰³ <https://mtalab.adfg.alaska.gov/CWT/default.aspx>

⁴⁰⁴ <https://www.adfg.alaska.gov/index.cfm?adfg=fishinggeneconservationlab.main>

⁴⁰⁵ <https://www.fisheries.noaa.gov/about/auke-bay-laboratories>

⁴⁰⁶ <https://www.adfg.alaska.gov/FedAidPDFs/FMS16-03.pdf>

⁴⁰⁷ <https://www.adfg.alaska.gov/FedAidPDFs/FMS17-01.pdf>

⁴⁰⁸ http://www.akleg.gov/basis/get_documents.asp?session=29&docid=29664, <https://www.psc.org/fund-project/chinook-salmon-genetic-baseline-update-for-southeast-alaska-and-canadian-aabm-fisheries/>, <http://comments.npfmc.org/CommentReview/DownloadFile?p=c15e8b5e-4814-4653-a4e7-bca521f9bc32.pdf&fileName=PRESENTATION%20C5%20Chinook%20Baseline%20Update%20-%20BTemplin.pdf>

⁴⁰⁹ <https://www.adfg.alaska.gov/index.cfm?adfg=fishingCommercial.statisticsanddata>

⁴¹⁰ <https://www.adfg.alaska.gov/index.cfm?adfg=fishingpathologylab.main>

⁴¹¹ https://www.adfg.alaska.gov/index.cfm?adfg=fishingpathologylab.pathology_management

⁴¹² https://www.npafc.org/wp-content/uploads/Statistics/NPAFC_Hatchery_Stat-1952-2023.xlsx

13.11.	The fishery management organization shall establish appropriate mechanisms—such as databases and information networks to collect, share, and disseminate data related to their enhanced fishery activities—to facilitate cooperation on planning for enhanced fishery development at the States and international level.				
References:	See citations in evidence				
Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	Overall score
	10			0 x 3	10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)					High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)					Full Conformance
Non-conformance Number (if applicable):					--

9.5.2.17 Supporting Clause 13.12.

13.12.	The fishery management organization shall cooperate in the elaboration, adoption, and implementation of international codes of practice and procedures for introductions and transfers of enhanced fish.				
Relevance:	Relevant				
Evaluation Parameters					Met?
Process: <i>There is an international code of practice developed (Turner 1988). Available online here: http://www.fao.org/docrep/009/ae989e/ae989e00.HTM.</i>					☒
EVIDENCE:					
Turner (1988) ⁴¹³ developed internationally recognized codes of practice for introductions and transfers of marine and freshwater organisms, which includes specific guidelines for salmonids (in Appendix).					
In Alaska, introductions and transfers of salmon are further guided by the State's Finfish Genetics Policy, ⁴¹⁴ which states:					
A. Interstate: Live salmonids, including gametes, will not be imported from sources outside the state. Exceptions may be allowed for trans-boundary rivers.					
B. Inter-regional: Stocks will not be transported between major geographical areas: Southeast, Kodiak Island, Prince William Sound, Cook Island, Bristol Bay, AYK and Interior.					
C. Regional: Acceptability of transport within regions will be judged on the following criteria:					
1. Phenotypic characteristics of the donor sock must be shown to be appropriate for the proposed fish culture regions and the goals set in the management plan					
2. No distance is set or specified for transport within a region. It is recognized that transplants occurring over greater distances may result in increased straying and reduce the likelihood of a successful transplant. Although the risk of failure affects the agency transporting the fish, transplants with high probability of failure will be denied. Proposals for long distance transport should be accompanied by adequate justification for non-local stock.					
Furthermore, Alaska Statute 16.10.445 states, "Where feasible, salmon eggs utilized by a hatchery operator shall first be taken from stocks native to the area in which the hatchery is located, and then, upon department approval, from other areas, as necessary".					
These documents and Statute provide explicit codes of practice for the transfer and introduction of salmon into and within Alaska, and demonstrate Alaska's involvement with the development of and commitment to said codes.					
Current status/Appropriateness/Effectiveness: <i>The code of practice is being effectively observed by the State of interest.</i>					☒

⁴¹³ <http://www.fao.org/3/ae989e/ae989e00.htm>

⁴¹⁴ https://www.adfg.alaska.gov/static-f/fishing/PDFs/research/genetics_finfish_policy.pdf

13.12. The fishery management organization shall cooperate in the elaboration, adoption, and implementation of international codes of practice and procedures for introductions and transfers of enhanced fish.
EVIDENCE:

Hatchery permitting processes, administrated in Alaska by ADFG, ensure that salmon stock transfers and introductions abide by the State Finfish Genetics Policy. Consistent with and in support of the State's Finfish Genetics Policy, are the State's conditions for issuance of a Hatchery Permit:

- (1) salmon eggs procured by the hatchery must be from the department or a source approved by the department;
- (2) salmon eggs or resulting fry may not be placed in waters of the state other than those specifically designated in the permit;
- (3) salmon eggs or resulting fry, sold to a permit holder by the state or by another party approved by the department, may not be resold or otherwise transferred to another person;
- (4) salmon may not be released by the hatchery before department approval, and, for purposes of pathological examination and approval, the department shall be notified of the proposed release of salmon at least 15 days before the date of their proposed release by the hatchery;
- (5) diseased salmon be destroyed in a specific manner and place designated by the department;
- (6) adult salmon be harvested by hatchery operators only at specific locations as designated by the department;
- (7) surplus eggs from salmon returning to the hatchery be made available for sale first to the department and then, after inspection and approval by the department, to operators of other hatcheries authorized by permit to operate under AS 16.10.400 - 16.10.470;
- (8) if surplus salmon eggs are sold by a permit holder to another permit holder, a copy of the sales transaction be provided to the department;
- (9) [Repealed, Sec. 5 ch 110 SLA 1980].
- (10) a hatchery may be located in an area where a reasonable segregation from natural stocks occurs, but, when feasible, in an area where returning hatchery fish will pass through traditional salmon fisheries.

Evenson et al., (2018)⁴¹⁵ recently reviewed compliance by Alaska's salmon hatcheries with this policy, and individual hatchery evaluations of hatcheries, including descriptions of egg source and juvenile release sites, can be found here: <https://www.adfg.alaska.gov/index.cfm?adfg=fishingHatcheriesOtherInfo.reports>

Evidence Basis:

The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization cooperates in the elaboration, adoption, and implementation of international codes of practice and procedures for introductions and transfers of enhanced fisheries. Examples may include various regulations, data, and reports.


EVIDENCE:

Both State and international policies guide the orderly practice of salmon transfers in Alaska. Introduction of salmon into Alaska is prohibited by the State Finfish Genetics Policy, which is implemented through the hatchery permitting process administrated by ADFG with clear conditions on the source and transfer of salmon and their eggs. These policies and processes provide strong evidence that ADFG has developed and abides responsible fish transfer and introduction codes of practice.

References: See citations in evidence

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x	3	)	=	Overall score
	10			0					19
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)									High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)									Full Conformance
Non-conformance Number (if applicable):									--

⁴¹⁵ <https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2018-2019/ws/SP18-12.pdf>

9.5.2.18 Supporting Clause 13.13.

13.13.	The fishery management organization shall, in order to minimize risks of disease transfer and other adverse impacts on wild and enhanced fishery stocks, encourage adoption and promote the use of appropriate practices and procedures for (1) the selection and genetic improvement of broodstock, (2) the introduction of non-native species, and (3) the production, sale and transport of eggs, larvae, fry, broodstock, or other live materials. The fishery management organization shall facilitate the preparation and implementation of appropriate States (or international) codes of practice and procedures to this effect.
Relevance:	Relevant
Evaluation Parameters	Met?
Process: <i>There is a mechanism in place to assess and monitor the risks of disease transfer and other adverse effects on wild and enhanced fisheries s, codified as management objectives in a code of practice or set of procedures.</i>	☒
EVIDENCE: As previously described in detail (see Evidence for Supporting Clause 13.2), Alaska Statute 16.10.445, Alaska's Finfish Genetics Policy and associated conditions for hatchery permitting explicitly promote the use of local brood as initial egg source for hatchery production, limit salmon and egg transfer among regions, and generally prohibit the introduction of salmon from sources outside Alaska. In general, salmon hatcheries in Alaska do not intentionally select on specific traits such as size, run timing or disease resistance, once a broodstock has been established. This practice aims to limit genetic divergence from and genetic risk to the wild populations from which they are derived, in accordance with the State Finfish Genetics Policy, the Policy for the Management of Sustainable Salmon Fisheries⁴¹⁶ and various state statutes. Finally, to limit disease risk and transfer, ADFG conducts regular diagnostic testing of salmon reared at hatcheries throughout the State. This work directly supports mandate from Alaska Statute 16.10.420, which states "diseased salmon be destroyed in a specific manner and place designated by the department".	
Current status/Appropriateness/Effectiveness: <i>Management measures shall be implemented to achieve the objectives described in the code of practice, and there is evidence of their success at doing so. Care is taken to avoid both movement of genotypes or species between catchment areas or river or lake systems, and contamination of local wild genotypes from enhanced animals of the same species. Appropriate practices have been adopted for the genetic improvement of broodstock to avoid impoverishment of their genetic pool. Appropriate procedures are being published for the selection, production, sale, and transport of brood stocks, eggs, larvae, and fry. There has been preparation and implementation of appropriate codes of practice and procedures to accomplish the abovementioned items.</i>	☒
EVIDENCE: As described above and in Evidence of Supporting Clause 13.2, implementation of policies designed to limit the introduction, transfer and disease risk from salmon used for fisheries enhancement in Alaska occurs through ADFG administrated hatchery permitting processes and pathology screening.	
Evidence Basis: <i>The availability, quality, and/or adequacy of the evidence is sufficient to substantiate that the fishery management organization, in order to minimize risks of disease transfer and other adverse impacts on wild and enhanced stocks, encourages adoption of appropriate practices for (1) the genetic improvement of broodstock, (2) the introduction of non-native species, and (3) the production, sale, and transport of eggs, larvae, fry, broodstock, or other live materials. States facilitate the preparation and implementation of appropriate international codes of practice and procedures to this effect. Examples may include various regulations, data, and reports.</i>	☒
EVIDENCE:	

⁴¹⁶ <https://www.adfg.alaska.gov/static/regulations/regprocess/fisheriesboard/pdfs/2016-2017/jointcommittee/5aac39.pdf>

13.13. The fishery management organization shall, in order to minimize risks of disease transfer and other adverse impacts on wild and enhanced fishery stocks, encourage adoption and promote the use of appropriate practices and procedures for (1) the selection and genetic improvement of broodstock, (2) the introduction of non-native species, and (3) the production, sale and transport of eggs, larvae, fry, broodstock, or other live materials. The fishery management organization shall facilitate the preparation and implementation of appropriate States (or international) codes of practice and procedures to this effect.

A strong body of evidence demonstrates that management of salmon fisheries in Alaska actively regulate stock transfers among areas and regions, thereby limiting genetic and disease risks from enhancement activities. Furthermore, State supported salmon disease testing and Alaska Statute 16.10.420 combine to limit risks from enhanced salmon fisheries in Alaska.

References: See citations in evidence

Numerical score:	Starting score	–	(	Number of EPs <u>NOT</u> met	x 3	)	=	Overall score
	10			0				10
Corresponding Confidence Rating: (10 = High; 4 or 7 = Medium; 1 = Low)								High
Corresponding Conformance Level: (10 = Full Conformance; 7 = Minor NC; 4 = Major NC; 1 = Critical NC)								Full Conformance
Non-conformance Number (if applicable):								

10 Non-conformances and Corrective Actions

10.1 Non-conformances and associated Corrective Actions

The Assessment Team has not identified any new nonconformances in this reassessment.
A minor non-conformance open on clause 13.4 was closed during the 4th annual audit.

10.2 Recommendations

Relevant Supporting Clauses:

Clause 1.1–1.9: Structured and legally mandated management system, inter-agency cooperation, transparency, and continuous review of measures

Clause 3.1–3.2.4: Management objectives and rules, including escapement goals and balancing ecological and economic priorities

Clause 6.5: Measures to identify and protect depleted stocks and facilitate recovery

Clause 7.1: Precautionary approach applied to management decisions

Recommendations

- Continue to support inter-agency coordination including streamlined communication protocols or shared decision timelines, building on ADFG's collaborative efforts with BOF, NMFS, and NPFMC.
- Complement escapement goal management by encouraging precautionary and adaptive strategies during low marine survival periods, including dynamic in-season adjustments.
- Balance economic and conservation goals by promoting integrated fishery evaluations that include both biological and economic indicators.
- Promote development of a technical and probabilistic framework for SET to better assess when stock sustainability is jeopardized.

Relevant Supporting Clauses:

Clause 4.1–4.3: Data collection systems, including catch, bycatch, escapement, and observer programs

Clause 5.1–5.5: Stock assessment activities and institutional frameworks

Clause 6.1–6.5: Reference points and remedial actions for stock sustainability

Clause 13.1–13.6: Hatchery monitoring and enhancement impacts on wild stocks

Recommendations

- Continue to pursue opportunities to enhance data collection by supporting expansion of monitoring programs for underrepresented species.
- Strengthen observer programs by exploring cost-effective alternatives like electronic monitoring and industry or interagency partnerships, which could complement ADFG's current efforts.
- Promote reference point development by collaborating on research to define sustainable escapement thresholds, aligning with ADFG's science-based management goals.

Relevant Supporting Clauses:

Clause 7.1–7.2: Risk-based management and early action under uncertainty

Clause 6.2–6.5: Limit reference points and contingency plans

Clause 5.2: Climate and environmental change monitoring

Recommendations

- Support Chinook recovery by advocating for targeted research and habitat restoration, reinforcing ADFG's conservation priorities.
- Update escapement goals by assisting in data modernization efforts, such as integrating recent telemetry or genetic data

- Encourage earlier precautionary action by proposing risk-based triggers for interim measures before formal stock-of-concern designation.

Relevant Supporting Clauses

Clause 12.1–12.7: Ecosystem impacts, habitat protection, and ETP species

Clause 13.1–13.13: Hatchery management, genetic diversity, and ecosystem integrity

Recommendations:

- Support hatchery management refinements by encouraging spatial planning to reduce straying and competition, complementing ADFG's hatchery oversight.
- Promote ecosystem-based approaches by integrating ocean competition dynamics into management models, aligning with ADFG's habitat protection goals.

Relevant Supporting Clauses:

Clause 1.3–1.4.1: Transboundary stock management and cooperation

Clause 10.3–10.4.1: Monitoring and enforcement in international waters

Clause 13.11–13.13: Data sharing and coordination for enhanced fisheries

Recommendations:

- Support continuing participation in international coordination bodies for conservation of salmon and steelhead in waters of the North Pacific Ocean.
- Clarify stock origin impacts by encouraging tagging or genetic studies to better understand harvest composition, aiding ADFG's cross-border management efforts

Relevant Supporting Clauses:

Clause 3.2.1–3.2.4: Economic viability, responsible fishing, and community interests

Clause 13.2.1: Ensuring hatchery development does not negatively affect local communities

Recommendations:

- Promote balanced hatchery strategies by supporting evaluations of long-term ecological and economic trade-offs, complementing ADFG's sustainability assessments.

Relevant Supporting Clauses:

Clause 5.2: Research capacity to assess climate and environmental change impacts

Clause 12.2.11: Addressing human impacts on ecosystems

Clause 13.1.3: Risk-based management of enhancement activities under climate uncertainty

Recommendations:

- Support climate adaptation planning by contributing to scenario modeling and resilience frameworks, reinforcing ADFG's efforts to integrate climate science into fisheries management.

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12 Appendices

12.1 Appendix 1 – External Peer Review

The CSI RFM program requires that reports be subjected to review by a reviewers external to the Certification Body. Based on the technical expertise required, a team of Peer Reviewers was selected. Peer Reviewers were asked to focus on specific parts of the assessment depending on their particular areas of expertise but were also asked to provide comments elsewhere where they saw fit to do so. The team of Peer Reviewers for this assessment was made up of:

- Randy Ericksen
- Stephen Fried

Note. Peer reviewer information has been removed and peer reviews are unattributed in this report.

12.2 Appendix 2 – Stakeholder submissions and Assessment Team Responses

12.2.1 Peer Reviewer 1

12.2.1.1 General Comments

Peer Reviewer Comments	Assessment Team Response
General Comments	
I agree that the US Alaska Salmon Commercial Fisheries be awarded continued certification against the CSI RFM Certification Program Fisheries Standard v2.2. The Alaska Salmon Fishery is arguably the best managed salmon fishery in the world. The Alaska salmon hatchery fishery enhancement program has been well managed although not without controversy. The state of Alaska and PNP hatchery operators have invested significant time and research into investigating potential impacts of the hatchery programs on wild pink and chum salmon populations. While research on hatchery impacts on chum have not yet been completed, several scientific journal articles have been published to date. The ADFG commissioner recently paused future increases in hatchery pink salmon production, and reduced hatchery chum salmon production by 25% pending a review by the SE Regional Hatchery Planning Team. On the other hand, numerous peer-reviewed scientific journal articles have shown negative correlations between high abundances of juvenile pink salmon in the North Pacific and other species ranging from forage fish, squid, other salmon species, seabirds and whales. Given that Alaska hatcheries release about 1 billion pink salmon annually (68% of total pink salmon hatchery releases by all countries), I find ADFGs response to these studies to be insufficient. This issue deserves further investigation or at least an external peer review. My comments are mostly editorial in nature. However, some will require additional review by the Assessment Team (e.g. negative ecological impacts on other species from hatchery pink salmon releases in the ocean). These could lead to minor conformances.	See response to specific issues identified by the reviewer under corresponding supporting clauses below. The assessment determined that ADFG has effectively responded to scientific literature on marine ecosystem effects of high salmon abundance by assessing relative hatchery contributions and developing a salmon ocean ecology program to answer pressing questions about marine processes that influence the abundance and characteristics of our salmon populations. Editorial comments have been addressed.

12.2.1.2 Non-conformances raised (if applicable)

Peer Reviewer Comments	Assessment Team Response
Background Section	
The Assessment Team did not find any non-conformance issues and therefore did not recommend any corrective actions. I did raise some issues in my comments that need to be addressed by the Assessment Team. Some of these issues could result in one or more minor non-conformances.	All issues identified by the reviewer have been addressed. No new non-conformances were warranted.

12.2.1.3 Scoring element review

Section A: The Fisheries Management System

Clause	Peer Reviewer comment	Assessment team response
1. Structured and legally mandated management system		
1.1.	The evidence for Appropriateness/effectiveness just states “see supporting clause 6.2”. Not only is it inconvenient to have to search forward in the document, 6.2 does not provide sufficient evidence to support the scoring of clause 1.1.	Additional evidence provided to support scoring.
1.2.	The evidence for Appropriateness/effectiveness talks about how fisheries are managed to meet escapement goals and briefly mentions stocks in SE Alaska that are harvested in AK and Canada fisheries. The SE Alaska Chinook troll fishery harvests primarily non-Alaska stocks originating from B.C., Washington and Oregon. There should be some discussion about how non-Alaska stocks caught in Alaska waters, including transboundary river stocks, are managed.	Additional evidence provided for fisheries harvesting mixed and non-local stocks describing management with consideration for exploitation in all pertinent jurisdictions.
1.2.1.	Agree with scoring and evidence provided	No response necessary
1.3.	The evidence provided under current status/appropriateness/effectiveness lists the organizations ADFG participates in but does not provide evidence that the process is effective at ensuring the stock is sustainably exploited. More evidence is needed. The evidence for evidence basis just states that the evidence is available and adequate but does not provide any examples. Suggest citing annual PSC documents by the CTC and Transboundary Committees.	References were added to related Pacific Salmon Commission reports as per reviewer comments.
1.3.1.	There is a typo under Evidence Basis referring to supporting clause “1.4”. Otherwise, agree with scoring and justification.	Typo corrected
1.4.	Not relevant	No response necessary
1.4.1	Agree with scoring and justification. Suggest also mentioning that ADNR is authorized to create an instream flow reservation for fish and wildlife. ADFG has a program to gather information and nominate instream flow reservations for ADNR to adjudicate.	Suggested information is added.
1.5.	Agree with scoring and justification. Note typo on Page 71 “habitat 99”.	Typo corrected
1.6.	Agree with scoring and justification.	No response necessary
1.6.1.	Not relevant	No response necessary
1.7.	Agree with scoring and justification.	No response necessary
1.8.	Agree with scoring and justification. Consider discussion of local advisory committee inputs	Information added as suggested.
1.9.	Not relevant	No response necessary
2. Coastal area management frameworks		
2.1.	Agree with scoring and justification.	No response necessary
2.1.1.	Agree with scoring and justification.	No response necessary
2.1.2.	Agree with scoring and justification.	No response necessary

Clause	Peer Reviewer comment	Assessment team response
2.2.	Alaska is the only US state that does not currently have a Coastal Management Program. The Alaska Coastal Management Program expired in 2011. The federal NEPA process requires federal agencies evaluate the environmental and related social and economic effects of their proposed actions and provides opportunities for public review and comment on those evaluations. The NEPA process is not as comprehensive as the Coastal Management Program. Process: It is not clear from the evidence provided, how public awareness on the need for protection and management of coastal resources has been attempted. The evidence states “All construction activities in the coastal zone (e.g., work on docks, breakwaters, harbors and other infrastructure) are subject in many cases to the NEPA process”. What kind of activities are not covered by the NEPA process and how are fishing communities consulted? How does the NEPA process address coastal management planning outside of specific development projects? The entire last paragraph regarding ADFG sport fish area managers working closely with the BOF seems irrelevant as it does not address coastal management.	The evaluation adequately describes the state process for management of coastal resources. Additional explanation was provided to describe federal/NEPA versus state processes. Descriptions of state processes for fisheries and fishing community involvement were revised to clarify applicability.
2.3.	Agree with scoring and justification.	No response necessary
2.4.	Agree with scoring and justification.	No response necessary
2.5.	Agree with scoring and justification.	No response necessary
2.6.	Agree with scoring and justification. Note that the first and third paragraphs of the evidence for current status (pg 91) are basically the same.	Duplicative material deleted
2.7.	Process: Suggest also mentioning the Alsek and Yukon transboundary rivers that flow out of the Yukon Territories. Current status: I’m not sure I would describe Yukon River Chinook and chum salmon populations as robust. Typo first sentence second paragraph “130are” Agree with scoring.	All major transboundary rivers are referenced. Characterization of Yukon salmon runs was revised. Typo corrected.
3. Management objectives and plan		
3.1.	Under the evidence provided under Current status/appropriateness/effectiveness (pg 96) it states that the ADFG area management biologist (AMB) is under direction of the BOF. While ADFG does provide inseason management based on regulations set by the BOF, the AMBs are delegated authority to take management actions by the Commissioner of ADFG (not the BOF). Otherwise, agree with scoring and justification.	Description corrected as per comment.
3.1.1.	Agree with scoring and justification.	No response necessary

Clause	Peer Reviewer comment	Assessment team response
3.1.2.	Agree with scoring and justification. Note at bottom of pg 98 there is a typo. The Habitat Section maintains and updates the anadromous stream catalogue, not the Sport Fish Division.	Corrected
3.1.3.	Agree with scoring and justification.	No response necessary
3.2.	Not applicable.	No response necessary
3.2.1.	Agree with scoring and justification.	No response necessary
3.2.2.	Agree with scoring and justification.	No response necessary
3.2.3.	Agree with scoring and justification.	No response necessary
3.2.4.	Agree with scoring and justification. Note at top of pg. 105 there is a typo. The Habitat Section maintains and updates the anadromous stream catalogue, not the Sport Fish Division.	No response necessary

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

Clause	Peer Reviewer comment	Assessment team response
4. Fishery data		
4.1.	The Process parameter states “For salmon, the assessors shall describe and present the enumeration methods (i.e., peak aerial survey, feet survey, weir count, tower, mark-recapture, sonar, etc.) utilized for all the major stocks managed by formal escapement goal in Alaska.” There was no discussion of this in the Process evidence.	Agree, new text added.
4.1.1.	The evidence under Evidence Basis is blank (pg 111). Otherwise, agree with scoring and justification.	Agree that no evidence was presented. Text was added.
4.1.2.	Agree with scoring and justification.	No response necessary
4.2.	Agree with scoring and justification.	No response necessary
4.2.1.	Agree with scoring and justification.	No response necessary
4.3.	Agree with scoring and justification.	No response necessary
4.4.	Suggest including reports published by ADFG Subsistence Division that highlight the importance of fish as food.	Agree new text and reference added.
4.5.	Agree with scoring and justification.	No response necessary
4.6.	Evidence for Current Status (pg 125) states “As stated previously there are no small-scale salmon fisheries in Alaska.” Suggest clarifying you are talking specifically about “commercial” salmon fisheries. Otherwise, agree with scoring and justification.	Agree, text changed
4.7.	Agree with scoring and justification.	No response necessary
4.8.	Agree with scoring and justification.	No response necessary
4.9.	Not relevant.	No response necessary
4.10.	Not relevant.	No response necessary
4.11.	Not relevant.	No response necessary
5. Stock assessment		
5.1.	Agree with scoring and justification.	No response necessary
5.1.1.	Not relevant.	No response necessary
5.1.2.	Agree with scoring and justification.	No response necessary
5.2.	Agree with scoring and justification.	No response necessary
5.3.	Agree with scoring and justification.	No response necessary
5.4.	Agree with scoring and justification.	No response necessary
5.5.	Agree with scoring and justification.	No response necessary

Clause	Peer Reviewer comment	Assessment team response
6. Biological reference points and harvest control rule		
6.1.	Agree with scoring and justification.	No response necessary
6.2.	It is not clear what a proxy for the LRP is for most AK salmon stocks that don't have an SET (as is the case of most stocks). I disagree that "the lower end of the range set for a BEG, SEG or OEG practically serves as the LRP". For example, Taku River Chinook have been below the lower end of the BEG range since 2016. The stock is listed as a Management Stock of Concern despite being below the lower end of the BEG since 2016. If the lower end of the BEG is a proxy for the LRP, shouldn't this stock be listed as a Conservation Concern?	Virtually all escapement goals in Alaska are expressed in terms of a range (see Munro 2023). Alaska's salmon managers strive to regulate the fisheries to ensure that annual escapements fall within the range and prevent the escapement from falling below the range. A Limit Reference Point (LRP) for an escapement goal is "a threshold that management would seek to avoid crossing when crossed, indicates a stock is at risk of being overfished or has become overfished, triggering immediate management action to prevent further decline" Management for target reference points provides an effective operational equivalent for a traditional limit reference point in salmon management systems by effectively avoiding lower escapements to the extent that this is possible by regulating fisheries. To address this review comment, this assessment considered the adequacy of Alaska's use of escapement goal-based TRPs as an operational equivalent of a LRP by examining stock status in relation to proxy values for traditional LRPs Identified for the purposes of this assessment as 50% of the lower bound of the escapement goal range. This evaluation determined that population-specific LRP proxies were exceeded more than 90% of the time from 2007-2021 for salmon stocks in Alaska. Therefore, management for target reference points provides an effective operational equivalent of a limit reference point in the Alaska salmon management system by effectively avoiding lower escapements to the extent that this is possible by regulating fisheries. Taku Chinook stock have had several years when the escapement goal has not been met. However, ADFG and thru the Pacific Salmon Treaty, Canada has imposed severe restrictions on all fisheries that harvest this stock. The extremely low Exploitation rates on this stock (see PACIFIC SALMON COMMISSION JOINT CHINOOK TECHNICAL COMMITTEE REPORT 2024 Exploitation Rate Analysis TCCHINOOK (25)-01) demonstrates the effectiveness of those restrictions. All available data strongly identifies that that primary cause for low run sizes is marine survival, not fishery exploitation. Under the Alaska system for identifying stocks of concern, it is appropriate to list a stock of management concern when factors such as low marine survival, not exploitation is the cause for low run sizes.
6.3.	It is not clear to me what constitutes overfishing for Alaska salmon stocks as in the case for Taku River Chinook salmon.	See 6.2 explanation

Clause	Peer Reviewer comment	Assessment team response
6.4.	Agree with scoring and justification.	No response necessary
6.5.	Agree with scoring and justification.	No response necessary
7. Precautionary approach		
7.1.	Agree with scoring and justification.	No response necessary
7.1.1.	Agree with scoring and justification.	No response necessary
7.1.2.	Agree with scoring and justification.	No response necessary
7.2.	Not relevant.	No response necessary

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

Clause	Peer Reviewer comment	Assessment team response
8. Management measures		
8.1.	Agree with scoring and justification.	No response necessary
8.1.1.	Agree with scoring and justification.	No response necessary
8.1.2.	Agree with scoring and justification.	No response necessary
8.2.	Agree with scoring and justification.	No response necessary
8.3.	Agree with scoring and justification.	No response necessary
8.4.	Agree with scoring and justification.	No response necessary
8.4.1.	Agree with scoring and justification.	No response necessary
8.5.	Agree with scoring and justification.	No response necessary
8.5.1.	What are the specific management objectives to minimize catch of non-target species? Regulation 5 AAC 93.310 specifically prohibits the waste of salmon – not non-target species in the salmon fishery. What measures are in place to minimize incidental catch of seabirds in the salmon fishery?	New text added to identify relevant regulations. The Board of fish has not adopted a specific regulation to designed to minimize the incidental catch of sea birds. A work shop has been conducted and a report has been prepared that examined the extent and impact of the Alaksa Gillnet fishery on sea birds. Contact Alaska Fisheries Development Foundation. P.O. Box 2223 Wrangel Ak for reports https://afdf.org/
8.6.	AS16.05.510 and AS 16.05.520 specifically address marking of commercial fishing vessels. What about the requirements for marking fishing gear such as driftnets and setnets?	New text added to reference regulation's requiring that drift and set gill nets be marked.
8.7.	Agree with scoring and justification.	No response necessary
8.8.	Agree with scoring and justification.	No response necessary
8.9.	Agree with scoring and justification.	No response necessary
8.10.	Not relevant.	No response necessary
8.11.	Agree with scoring and justification.	No response necessary
8.12.	Agree with scoring and justification.	No response necessary
8.13.	Not relevant.	No response necessary
9. Appropriate standards of fishers' competence		
9.1.	Note that relevance has not been completed for this clause. Agree with scoring and justification.	Fixed
9.2.	Note that relevance has not been completed for this clause. Agree with scoring and justification.	Fixed
9.3.	Agree with scoring and justification.	No response necessary
10. Effective legal and administrative framework		
10.1.	Note that relevance has not been completed for this clause. Agree with scoring and justification.	Fixed
10.2.	Note that relevance has not been completed for this clause. Agree with scoring and justification.	Fixed

Clause	Peer Reviewer comment	Assessment team response
10.3.	Not relevant.	No response necessary
10.3.1.	Not relevant.	No response necessary
10.4.	Not relevant.	No response necessary
10.4.1.	Not relevant.	No response necessary
11. Framework for sanctions		
11.1.	Agree with scoring and justification.	No response necessary
11.2.	Agree with scoring and justification.	No response necessary
11.3.	Agree with scoring and justification.	No response necessary
11.4.	Not relevant.	No response necessary

Section D: Serious Impacts of the Fishery on the Ecosystem

Clause	Peer Reviewer comment	Assessment team response
12. Impacts of the fishery on the ecosystem		
12.1.	Agree with scoring and justification.	No response necessary
12.2.	Not applicable.	No response necessary
12.2.1.	Agree with scoring and justification.	No response necessary
12.2.2.	Is it true that discards of “minor” salmon species is reported through eLandings and FishTickets? For example, are juvenile chinook salmon caught and discarded in gillnet and purse seine fisheries accurately reported?	Revised to clarify that all catch of minor salmon species are recorded and reported. Minor salmon species in this context are defined as small numbers of other salmon species incidentally harvested in pursuit of abundant species which are the primary target of the fishery. Salmon catch is not discarded except in limited cases where there are species-specific restrictions. Juvenile salmon are generally not susceptible to catch in significant numbers by commercial salmon fishing gear.
12.2.3.	Agree with scoring and justification.	No response necessary
12.2.4.	There is no mention of fishery interactions with Western DPS stellar sea lions. However, the evidence under clause 10.1 mentions Stellar sea lions with bullet holes washing ashore “likely caused by interactions with fishers in the gillnet fisheries”. This warrants some discussion in this clause.	This issue was addressed under 10.1 as it is an enforcement matter. The fishing gear does not directly impact Stellar sea lions. Nor does fishery harvest of salmon produce indirect food web effects on sea lions.
12.2.5.	Agree with scoring and justification.	No response necessary
12.2.6.	Agree with scoring and justification.	No response necessary
12.2.7.	Agree with scoring and justification.	No response necessary
12.2.8.	Agree with scoring and justification.	No response necessary
12.2.9.	The assessors point out the large number of peer reviewed journal articles documenting the negative correlation between juvenile pink salmon abundance in the ocean and other species including salmon, forage fish, squid, seabirds and whales. Ruggerone et al. (2023) found evidence that in the dominant odd years, pink salmon predation can initiate pelagic trophic cascades by reducing herbivorous zooplankton abundance. They concluded that evidence indicates that open-ocean marine carrying capacity in the northern North Pacific Ocean and Bering Sea can be mediated by top-down forcing by pink salmon and by ocean heating. Alaska hatcheries account for 68% of the total pink salmon hatchery releases (1 billion in 2013) into	The Alaska fishery management system has considered the potential for salmon hatchery impacts on the marine ecosystem by assessing the relative contribution of Alaska hatcheries to salmon abundance (Templin 2024). While Alaska hatcheries contribute a large percentage of total hatchery production of pink salmon in the Pacific Ocean, pink salmon abundance is predominately wild salmon. Therefore, Alaska hatcheries contribute a small percentage of the combined hatchery and wild population which likely does not result in a significant ecosystem impact, particularly relative to the largescale ecosystem environmental variation and climate change. The likelihood

Clause	Peer Reviewer comment	Assessment team response
	the North Pacific. The assessors cite an ADFG special publication (Evenson et al. 2018), a 2024 BOF presentation (Templin 2024), and a report prepared for the reassessment (Americus et al. 2025 that is not publicly available), to show that ADFG considered the findings but determined that Alaska hatchery produced pink salmon represent a relatively small fraction of the total species' biomass in the North Pacific Ocean. Templin (2024) concluded that changes in Alaska hatchery production will likely not affect North Pacific-wide marine competition. While it is true that such correlations do not prove causality, the preponderance of peer reviewed journal articles demonstrating these correlations deserves more investigation by ADFG. Without such investigations, it is difficult to conclude that the fishery under consideration does not hinder recovery or rebuilding of overfished species.	of significant ecosystem interactions by large numbers of wild Pink Salmon is not disputed. A description was also added of a new Salmon Ocean Ecology Program organized by ADFG to support statewide salmon fisheries management through the assessment and monitoring of salmon in the marine environment. The goals of this program are to understand the marine life of Alaskan salmon, use this information to assist fishery management decision-making, and help answer pressing questions about marine processes that influence the abundance and characteristics of our salmon populations.
12.2.10.	Agree with scoring and justification.	No response necessary
12.2.11.	Agree with scoring and justification.	No response necessary
12.3.	Agree with scoring and justification.	No response necessary
12.4.	Agree with scoring and justification.	No response necessary
12.5.	Agree with scoring and justification.	No response necessary
12.6.	Agree with scoring and justification.	No response necessary
12.7.	Agree with scoring and justification.	No response necessary
13. Fisheries enhancement activities (remove if not applicable)		
13.1.	See comments under 12.2.9 regarding recent journal articles potentially linking pink salmon zooplankton predation initiating pelagic trophic cascades in the North Pacific.	The Alaska fishery management system has considered the potential for salmon hatchery impacts on the marine ecosystem by assessing the relative contribution of Alaska hatcheries to salmon abundance (Templin 2024). While Alaska hatcheries contribute a large percentage of total hatchery production of pink salmon in the Pacific Ocean, pink salmon abundance is predominately wild salmon. Therefore, Alaska hatcheries contribute a small percentage of the combined hatchery and wild population which likely does not result in a significant ecosystem impact, particularly relative to the largescale ecosystem environmental variation and climate change. The likelihood of significant ecosystem interactions by large numbers of wild Pink Salmon is not disputed.
13.1.1.	Agree with scoring and justification.	No response necessary
13.2.	Agree with scoring and justification.	No response necessary
13.2.1.	Agree with scoring and justification.	No response necessary
13.3.	Agree with scoring and justification.	No response necessary
13.4.	Agree with scoring and justification.	No response necessary
13.5.	Agree with scoring and justification.	No response necessary
13.6.	Agree with scoring and justification.	No response necessary
13.7.	Agree with scoring and justification.	No response necessary
13.7.1.	Agree with scoring and justification.	No response necessary
13.7.2.	Agree with scoring and justification.	No response necessary
13.7.3.	Not relevant	No response necessary
13.8.	Agree with scoring and justification.	No response necessary

Clause	Peer Reviewer comment	Assessment team response
13.9.	Agree with scoring and justification.	No response necessary
13.10.	Agree with scoring and justification.	No response necessary
13.11.	Agree with scoring and justification.	No response necessary
13.12.	Agree with scoring and justification.	No response necessary
13.13.	Agree with scoring and justification.	No response necessary

12.2.1.4 Conclusion

Peer Reviewer Comments	Assessment Team Response
General Comments	
I agree that the US Alaska Salmon Commercial Fisheries be awarded continued certification against the CSI RFM Certification Program Fisheries Standard v2.2. The Assessment Team did not find any non-conformance issues and therefore did not recommend any corrective actions. I did raise some issues in my comments that need to be addressed by the Assessment Team. Some of these issues could result in one or more minor non-conformances.	All issues identified by the reviewer have been addressed. No new non-conformances were warranted.

12.2.2 Peer Reviewer 2

12.2.2.1 General Comments

Peer Reviewer Comments	Assessment Team Response
General Comments	
I am in broad agreement with the conclusions reached by the Assessment Team, and found that the extensive evidence provided was sufficient to support the conclusions. I did have a few suggestions for including additional information as evidence in support of some clauses, but these would not alter any conclusions: 1) for clauses 1.3, 1.3.1, 4.1, 4.1.2, 4.2, and 4.2.1, bycatch of Western Alaska Chinook and Chum Salmon by offshore trawl fleets could be included as additional evidence in support of findings; 2) for clauses 3.2.1 and 3.2.2, I agree with the assigned scoring of both clauses, but don't agree that Limited Entry avoided excess fishing capacity in all salmon fisheries, although it probably avoided overcapacity. Because of excess capacity, as well large fluctuations in annual salmon returns and run timing, Alaska salmon fisheries usually have restrictive management measures to ensure escapement goals are met, etc. There is also at least one instance in which permits have been reduced through a buy-back program (e.g. a purse seine fishery in Southeast Alaska), which suggests a correction of overcapacity; 3) for clause 8.4.1, I think it may be useful to mention that alternative management options such as regulatory management plans, and active in-season management are also in place to "rationalize fishing" and their effectiveness is studied so that modifications can be made.	1) We agree that adding information about the by-catch of Salmon in the groundfish fisheries would strengthen the report. We added new text to address this suggestion. 2) Descriptions of limited entry revised to clarify that it provides a basis for regulating fishing capacity in conjunction with other management measures. 3) Additional explanation was added describing alternative management actions as per reviewer comment. Other revisions address reviewer suggestions under specific clauses. Typos, spelling, etc. were corrected as per review comments in separate file.

I made a few other suggestions for additional modifications that are included under my comments for specific clauses, including a few instances where a clause was not marked as either relevant or not relevant, as well as one instance in which a clause (clause 4.8) was marked as not relevant (which I agree with) and was still scored.

Overall, the document is clearly written and doesn't seem to have a lot of typos, spelling, and grammatical errors. However, I did come across some during my technical review, which is not surprising for such a large document, and included a list of these in a separate file I submitted. I assume someone will be conduct a thorough edit before the document is finalized and released.

12.2.2.2 Non-conformances raised (if applicable)

Peer Reviewer Comments	Assessment Team Response
Background Section	
No non-conformance issues were raised by the Assessment Team, and I agree with this finding.	

12.2.2.3 Scoring element review

Section A: The Fisheries Management System

Clause	Peer Reviewer comment	Assessment team response
1. Structured and legally mandated management system		
1.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
1.2.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
1.2.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
1.3.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance), but wonder whether this is an appropriate section to cite the offshore trawl fleets bycatch of Western Alaska Chinook and Chum Salmon. There has been work that estimates this, for example: https://www.npfmc.org/wp-content/PDFdocuments/bycatch/SalmonBycatchFAQ.p df ; https://www.npfmc.org/fisheries- issues/bycatch/salmon-bycatch	Additional explanation was added to the explanatory evidence for SC 1.3.1 identifying catch of Chinook in the ocean troll fishery and corresponding management measures.
1.3.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance) – also see comments for 1.3 concerning Chinook and Chum Salmon trawl bycatch.	Additional explanation was added to the explanatory evidence for SC 1.3.1 identifying catch of Chinook in the ocean troll fishery and corresponding management measures. Scoring was unchanged.
1.4.	I agree this clause is not relevant.	No response necessary

Clause	Peer Reviewer comment	Assessment team response
1.4.1	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
1.5.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
1.6.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
1.6.1.	I agree this clause is not relevant.	No response necessary
1.7.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
1.8.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
1.9.	I agree this clause is not relevant.	No response necessary
2. Coastal area management frameworks		
2.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
2.1.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
2.1.2.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
2.2.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
2.3.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
2.4.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
2.5.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
2.6.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
2.7.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
3. Management objectives and plan		
3.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
3.1.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary

Clause	Peer Reviewer comment	Assessment team response
	Conformance)	
3.1.2.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
3.1.3.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
3.2.	There is no specific finding that needed to be listed for this clause, which just refers the 3.2.1 through 3.2.4	No response necessary
3.2.1.	While I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance), I'm not sure I agree that the Limited Entry System avoided excess fishing capacity in all salmon fisheries, although it probably did avoid overcapacity. FAO guidelines define fishing capacity as "the amount of fish or fishing effort that can be produced over a period of time by a vessel or a fleet if fully utilized. That is, if effort and catch were not constrained by restrictive management measures" (FAO, 2008). Most Alaska salmon fisheries have restrictive management measures to ensure that escapement goals are met, etc. These measures are needed not only because run strength varies from year to year, but also because, in at least some areas, there is enough fishing capacity to effectively harvest most salmon entering a fishing district. Restrictive measures can be put in place prior to the fishing season through regulatory management plans that limit harvest, restrict fishing power (vessel size, amount and type of fishing gear), etc., as well during the season through fishery managers' authority to set fishing periods, open and close fishing sections, etc. Also, there has been at least one instance in which permits have been reduced through a buy-back program (e.g. a purse seine fishery in Southeast Alaska)	Description of limited entry was revised from "avoid" to "regulate." Additional clarification added as per reviewer comment regarding restrictive management measures in addition to limited entry.
3.2.2.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance). Limited Entry by itself did not avoid having excess fishing capacity Alaska salmon fisheries, and in some/many areas, existing fleets have the capacity to greatly impact stock sustainability unless restrictive management actions are taken.	Description of limited entry was revised from "avoid" to "regulate." Additional clarification added as per reviewer comment regarding restrictive management measures in addition to limited entry.
3.2.3.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary
3.2.4.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance)	No response necessary

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

Clause	Peer Reviewer comment	Assessment team response
4. Fishery data		
	While I generally agree with the Assessment Team's findings on scoring (10), confidence rating (High) and conformance level (Full Conformance), I wonder whether the offshore trawl fleet bycatch of Western Alaska Chinook and Chum Salmon should be mentioned There has been work done that estimates this (although it might not be considered a "significant removal"), for example: https://www.npfmc.org/wp-content/PDFdocuments/bycatch/SalmonBycatchFAQ.pdf ; https://www.npfmc.org/fisheries-issues/bycatch/salmon-bycatch	Agree -New Text was added identifying catch of Chinook in the ocean troll fishery and corresponding management measures. Scoring was unchanged.
4.1.		
4.1.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
4.1.2.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
4.2.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High), but was wondering whether NOAA's North Pacific Observer Program for the offshore trawl fleet should also be mentioned since they have collected data on salmon bycatch.	Agree new text added
4.2.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High), but again was wondering whether NOAA's North Pacific Observer Program for the offshore trawl fleet should also be mentioned since they have collected data on salmon bycatch.	Agree new text added
4.3.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
4.4.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
4.5.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
4.6.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
4.7.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
4.8.	I agree this clause is not relevant, and wonder why it was still scored.	No response necessary
4.9.	I agree this clause is not relevant	No response necessary
4.10.	I agree this clause is not relevant	No response necessary
4.11.	I agree this clause is not relevant	No response necessary
5. Stock assessment		
5.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
5.1.1.	I agree this clause is not relevant	No response necessary
5.1.2.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
5.2.	I agree with the Assessment Team's findings on scoring	No response necessary

Clause	Peer Reviewer comment	Assessment team response
	(10), confidence rating (High)	
5.3.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
5.4.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
5.5.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
6. Biological reference points and harvest control rule		
6.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
6.2.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
6.3.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
6.4.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
6.5.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
7. Precautionary approach		
7.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
7.1.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
7.1.2.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
7.2.	I agree this clause is not relevant	No response necessary

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

Clause	Peer Reviewer comment	Assessment team response
8. Management measures		
8.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
8.1.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
8.1.2.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High), and note that this is the first clause in which salmon bycatch in a groundfish (i.e. trawl) fishery was mentioned. I previously commented that information on trawl fishery salmon bycatch should have been included as supporting evidence for other clauses (e.g. clauses 1.2.1, 1.3, 4, 4.2, and 4.2.1).	Agree – this is the first time we mentioned offshore by-catch in our draft report. New text was added in other sections as suggested.
8.2.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
8.3.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
8.4.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
8.4.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High), but suggest it might also be useful to mention that alternative management options	Additional explanation added to evidence as per reviewer comment.

Clause	Peer Reviewer comment	Assessment team response
	such as regulatory management plans, and active in-season management are also in place to “rationalize fishing” and their effectiveness is studied so that modifications can be made.	
8.5.	I agree with the Assessment Team’s findings on scoring (10), confidence rating (High)	No response necessary
8.5.1.	I agree with the Assessment Team’s findings on scoring (10), confidence rating (High)	No response necessary
8.6.	I agree with the Assessment Team’s findings on scoring (10), confidence rating (High)	No response necessary
8.7.	I agree with the Assessment Team’s findings on scoring (10), confidence rating (High)	No response necessary
8.8.	I agree with the Assessment Team’s findings on scoring (10), confidence rating (High)	No response necessary
8.9.	I agree with the Assessment Team’s findings on scoring (10), confidence rating (High)	No response necessary
8.10.	I agree this clause is not relevant	No response necessary
8.11.	I agree with the Assessment Team’s findings on scoring (10), confidence rating (High)	No response necessary
8.12.	I agree with the Assessment Team’s findings on scoring (10), confidence rating (High)	No response necessary
8.13.	I agree this clause is not relevant	No response necessary
9. Appropriate standards of fishers’ competence		
9.1.	I agree with the Assessment Team’s findings on scoring (10), confidence rating (High), but this clause needs to marked as relevant in the relevance section at the top of page 207.	Agreed -Fixed
9.2.	I agree with the Assessment Team’s findings on scoring (10), confidence rating (High), but this clause need to marked as relevant in the relevance section at the top of page 212.	Agreed - Fixed
9.3.	I agree with the Assessment Team’s findings on scoring (10), confidence rating (High)	No response necessary
10. Effective legal and administrative framework		
10.1.	I agree with the Assessment Team’s findings on scoring (10), confidence rating (High), but this clause needs to marked as relevant in the relevance section at the top of page 218.	Agreed, fixed
10.2.	I agree with the Assessment Team’s findings on scoring (10), confidence rating (High), but this clause needs to marked as relevant in the relevance section at the top of page 223.	Agreed -fixed
10.3.	I agree this clause is not relevant	No response necessary
10.3.1.	I agree this clause is not relevant	No response necessary
10.4.	I agree this clause is not relevant	No response necessary
10.4.1.	I agree this clause is not relevant	No response necessary
11. Framework for sanctions		
11.1.	I agree with the Assessment Team’s findings on scoring (10), confidence rating (High)	No response necessary
11.2.	I agree with the Assessment Team’s findings on scoring	Agreed - Fixed

Clause	Peer Reviewer comment	Assessment team response
	(10), confidence rating (High), but this clause needs to be marked as relevant in the relevance section at the top of page 232.	
11.3.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
11.4.	I agree this clause is not relevant	No response necessary

Section D: Serious Impacts of the Fishery on the Ecosystem

Clause	Peer Reviewer comment	Assessment team response
12. Impacts of the fishery on the ecosystem		
12.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
12.2.	I have no comment since this is a non-scoring clause with no evaluation	No response necessary
12.2.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
12.2.2.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
12.2.3.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
12.2.4.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
12.2.5.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
12.2.6.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
12.2.7.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
12.2.8.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
12.2.9.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
12.2.10.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
12.2.11.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
12.3.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
12.4.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High), but wonder whether the supporting information in clause 12.3 should be also be referenced as also supporting this clause.	Reference was added to clause 12.3 as per reviewer comment.
12.5.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
12.6.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
12.7.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
13. Fisheries enhancement activities (remove if not applicable)		
13.1.	I agree with the Assessment Team's findings on scoring	

Clause	Peer Reviewer comment	Assessment team response
	(10), confidence rating (High)	
13.1.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
13.2.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
13.2.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
13.3.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
13.4.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
13.5.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
13.6.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
13.7.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High), but wondered whether lake fertilization to enhance juvenile Sockeye Salmon survival is should be mentioned here, assuming it is still conducted.	Additional text was added to clarify that enhancement programs have also historically fertilized a number of small nutrient-limited lakes to increase salmon productivity. These efforts have largely been terminated except in a few specific cases.
13.7.1.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
13.7.2	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
13.7.3.	I agree clause is not relevant	No response necessary
13.8.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
13.9.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
13.10.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
13.11.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
13.12.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary
13.13.	I agree with the Assessment Team's findings on scoring (10), confidence rating (High)	No response necessary

12.2.2.4 Conclusion

Peer Reviewer Comments	Assessment Team Response
General Comments	
I think the conclusion of the Assessment Team is appropriate based on the substantial amount of evidence they presented in the assessment report. I agree with their determinations of full compliance for all relevant clauses, as well as the absence of any non-conformance issues. I found the tables and figures in the report to be helpful and well done. Overall, it is obvious that a substantial amount of work was done in conducting this assessment.	No response necessary

12.3 Appendix 3 – Data Deficient Framework (if applicable)

The AK Salmon commercial fishery is not data deficient.

12.4 Appendix 4 – Assessment Team and Peer Reviewer Bios

12.4.1 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 20 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 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 has been working as environmental consultant in the Caribbean doing field work and looking at the effects of industrialization on essential fish habitats and for the Environmental Defense Fund developing population dynamics models for data poor stocks in the Gulf of California. Recently, Dr. Mateo worked as National Research Council 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 Pacific Ocean perch.

Scott Marshall, Assessor 1

Mr. Scott Marshall received a B.S. in Fisheries Science at Oregon State University, an M.S. Fisheries Science University of Washington 1974 – 1980. Mr. Marshall was the Fisheries Scientist and Project Leader at the Fisheries Research Institute, University of Washington. His primary emphasis was on researching sockeye salmon productivity in the Chignik Lakes, Alaska, on determining the origins of Chinook salmon harvested by foreign vessels operating in the North Pacific Ocean, and on the population dynamics of sockeye salmon in the Lake Washington watershed of Washington.

1980 - 2001. Alaska Dept. Fish and Game: Mr. Marshall served in three primary capacities, Research Project Leader, Principal Fishery Scientist for Pacific Salmon Commission Affairs and Regional Supervisor. As a Project Leader, Mr. Marshall lead research teams in the study of population structure and dynamics of the state's Pacific Salmon and Pacific herring stocks. As a Principal Scientist Mr. Marshall served as a Co-Chairman or as Alaska's senior representative on several international technical teams established by the Pacific Salmon Treaty (e.g., Chinook Salmon, Transboundary Rivers, Canadian/Alaska Boundary Area Fisheries, Interceptions Accounting Committee, Data Sharing Committee, Editorial board). He served on Scientific and Statistical Committee of the North Pacific Management Council. As the Division of Commercial Fisheries Regional Supervisor for Southeast Alaska, Mr. Marshall represented the Department at Alaska Board of Fisheries meetings, reviewed and/or critiqued numerous regulatory proposals for the fisheries of Southeast Alaska. He oversaw the daily research and management of the Southeast Region's commercial, personal use and subsistence fisheries. He also served as Co-Chairman of the Transboundary Rivers Panel of the Pacific Salmon Commission. Undertook numerous administrative responsibilities, such as budgeting, hiring HR etc.

2000- 2005. Idaho Department of Fish and Game: Mr. Marshall served as the Fisheries Bureau's Staff Biologist for Endangered Species Act Affairs. This included developing Biological Assessments, Applications for ESA Section 7 & 10 permits, and writing reports for incidental take of endangered Pacific salmon that occurred during the conduct of research activities, recreational fisheries and hatchery operations. He also served as the Department's representative on the Habitat Committee of the Pacific Fishery Management Council.

2005 - 2013 U.S Fish and Wildlife: Mr. Marshall was a Fisheries Administrator in charge of the Lower Snake River Compensation Plan (a hatchery mitigation program to compensate for construction and operation of four hydroelectric dams on the Lower Snake River in Washington Oregon and Idaho). He developed, presented, and negotiated budgets for the program to the Bonneville Power Administration (roughly \$30 million annually). He reviewed and negotiated annual budgets, contracts, annual spending, and scientific reports developed by our fish and wildlife agency co-operators who implemented the program (3 states, 3 tribal agencies and several U.S Fish and Wildlife Service field offices). Mr. Marshall developed a series of three Programmatic Reviews (one for each of the primary species raised in our hatcheries) as required by the Northwest Power Planning Council's implementation legislation.

Ray Beamesderfer, Assessor 2

Mr. Beamesderfer holds a bachelor's degree in Wildlife and Fisheries Biology from the University of California, Davis, and a Master's in Fishery Resources from the University of Idaho. Ray has special expertise in using quantitative analysis, statistics, and computer modelling to solve difficult fisheries-related questions, and in synthesizing and translating scientific analyses. He has completed a wide variety of projects in fishery management, biological assessment, and conservation/recovery planning. He is the author of numerous reports, biological assessments, management plans, and scientific articles on fish population dynamics, fish conservation, fishery and hatchery management, sampling, and species interactions. Ray has served on fishery assessment teams for salmon fisheries in Alaska and Russia.

12.4.2 Peer Reviewer Bios

Based on the technical expertise required to carry out this assessment, a team of external Peer Reviewers was selected as follows.

Randy Ericksen

Randy has 40 years of experience working in the areas of fishery management, stock assessment, population monitoring, escapement goal analysis, and run forecasting. He worked 18 years as a fishery manager for the Alaska Department of Fish and Game, and over 7 years as a fishery policy analyst and consultant. He received a M.S. degree in Fisheries Science from the University of Alaska, Fairbanks and has worked with government agencies, commercial and recreational fisheries groups, indigenous groups, and national and international nongovernmental organizations. Randy is the author of numerous reports, fishery assessments, management plans, and scientific articles on fish population dynamics, fish conservation, fishery and hatchery management. He has been a speaker at international forums in the US, Canada, Japan

and Russia. He has conducted 8 MSC pre-assessments and assessed salmon fisheries for the Monterey Bay Aquarium Seafood Watch Program. This work has demonstrated his ability to identify likely problems for a fishery under Principle 1 and 2 that would arise from poor management. He has a good understanding of Canadian management systems and laws through his work in Alaska, participation in international salmon symposiums, and work as a consultant for the British Columbia Salmon Marketing Council and Oregon Dungeness Crab Commission. Randy is currently founder and fisheries advisor at RP Ericksen Consulting.

Stephen Fried

Stephen M Fried obtained a BS degree in Biology from City College of the City University of New York (1971) and an MS (1973) and PhD (1977) in Zoology from University of Maine Orono. His MS thesis involved estuarine fish seasonal distribution and abundance as part of pre-operational atomic power plant studies, while his PhD thesis concerned Atlantic salmon smolt migratory behavior using ultrasonic telemetry. During his time at University of Maine he also served as part of the scientific crew aboard the R/V Hero during a National Science Foundation research cruise along the Antarctic Peninsula (1973), for which he was awarded a U.S. Antarctic Service Medal. After receiving his Ph.D., he moved to Oregon where he briefly worked as a temporary biologist for Oregon Department of Fish and Wildlife as well as a volunteer for fishery related work at Oregon State University, including a short research cruise aboard the R/V Wacoma.

He moved to Alaska when he was hired by the Alaska Power Trollers Association to oversee their Logbook Program. After a year with that association (1977/1978), he went on to work for Alaska Department of Fish and Game (ADFG) for 22 years (1978-2000), and for U.S. Fish and Wildlife Service (USFWS) for 13 years (1979-2013). During his time with ADFG, he served as Bristol Bay Area Biologist for Fisheries Rehabilitation, Enhancement and Development Division, and then went to Commercial Fisheries Division where he served as Bering Sea Herring Lead Project Biologist, Bristol Bay Salmon Area Research Biologist, Exxon Valdez Oil Spill Study Coordinator, and Central Regional Research Supervisor (Prince William Sound/Copper River, Upper Cook Inlet, Lower Cook Inlet, and Bristol Bay management areas).

During his time with USFWS, he worked in the Federal Subsistence Management Program as a Regional Fish Biologist (Southcentral, Bristol Bay, Kodiak/Aleutians, Seward Peninsula, North Slope, and Northwest Arctic), and then as Fisheries Division Chief responsible for coordinating subsistence fishery responsibilities among five federal agencies (Bureau of Indian Affairs, Bureau of Land Management, Forest Service, National Parks Service, USFWS), overseeing the Fisheries Resource Monitoring and Partners for Fisheries Monitoring Programs, and supporting Regional Advisory Councils and the Federal Subsistence Board. Since retiring, he has continued to serve as a Science Editor for Fisheries Magazine, a publication of the American Fisheries Society.

12.5 Appendix 5. Alaska salmon escapements relative to goals 2014 -2022 (from Munro 2023)

Table 17. Southeast Region Chinook, chum, coho, pink, and sockeye salmon escapements compared to escapement goals for the years 2014 to 2022

	2014	2015	2016	2017	2018	2019	2020	2021	2022
CHINOOK SALMON									
Number Below	4	2	10	10	7	4	5	4	6
Number Met	7	8	1	1	3	6	5	5	5
Number Above	1	2	1	1	1	1	1	2	0
% Below	33%	17%	83%	83%	64%	36%	45%	36%	55%
% Met	58%	67%	8%	8%	27%	55%	45%	45%	45%
% Above	8%	17%	8%	8%	9%	9%	9%	18%	0%
CHUM SALMON									
Number Below	2	0	2	1	2	2	5	4	4
Number Met	6	5	6	5	4	6	3	3	3
Number Above	0	3	0	2	1	0	0	1	1
% Below	25%	0%	25%	13%	29%	25%	63%	50%	50%
% Met	75%	63%	75%	63%	57%	75%	38%	38%	38%
% Above	0%	38%	0%	25%	14%	0%	0%	13%	13%
COHO SALMON									
Number Below	0	0	3	1	2	1	4	2	1
Number Met	6	7	6	9	7	7	5	6	6
Number Above	8	7	4	3	4	3	2	2	2
% Below	0%	0%	23%	8%	15%	9%	36%	20%	11%
% Met	43%	50%	46%	69%	54%	64%	45%	60%	67%
% Above	57%	50%	31%	23%	31%	27%	18%	20%	22%
PINK SALMON									
Number Below	2	0	2	0	1	1	1	0	0
Number Met	0	3	2	3	2	2	2	2	3
Number Above	2	1	0	1	0	0	0	1	0
% Below	50%	0%	50%	0%	33%	33%	33%	0%	0%
% Met	0%	75%	50%	75%	67%	67%	67%	67%	100%
% Above	50%	25%	0%	25%	0%	0%	0%	33%	0%
SOCKEYE SALMON									
Number Below	2	1	3	4	6	2	6	3	2
Number Met	5	7	7	5	4	4	3	2	4
Number Above	5	5	3	3	2	6	2	7	6
% Below	17%	8%	23%	33%	50%	17%	55%	25%	17%
% Met	42%	54%	54%	42%	33%	33%	27%	17%	33%
% Above	42%	38%	23%	25%	17%	50%	18%	58%	50%

Table 18. Central Region (Bristol Bay, Cook Inlet, Prince William Sound/Copper River) Chinook, chum, coho, pink, and sockeye salmon escapements compared to escapement goals for the years 2014 to 2022.

	2014	2015	2016	2017	2018	2019	2020	2021	2022
CHINOOK SALMON									
Number Below	12	4	8	14	21	9	13	8	8
Number Met	14	20	12	9	6	15	5	8	5
Number Above	0	1	1	1	0	0	0	1	0
% Below	46%	16%	38%	58%	78%	38%	72%	47%	62%
% Met	54%	80%	57%	38%	22%	63%	28%	47%	38%
% Above	0%	4%	5%	4%	0%	0%	0%	6%	0%
CHUM SALMON									
Number Below	7	3	5	0	7	7	10	8	9
Number Met	10	8	11	11	9	5	5	5	8
Number Above	2	7	3	8	3	7	4	6	2
% Below	37%	17%	26%	0%	37%	37%	53%	42%	47%
% Met	53%	44%	58%	58%	47%	26%	26%	26%	42%
% Above	11%	39%	16%	42%	16%	37%	21%	32%	11%
COHO SALMON									
Number Below	1	0	2	0	1	4	0	0	3
Number Met	2	4	2	3	5	3	4	3	0
Number Above	3	1	1	3	1	0	1	2	1
% Below	17%	0%	40%	0%	14%	57%	0%	0%	75%
% Met	33%	80%	40%	50%	71%	43%	80%	60%	0%
% Above	50%	20%	20%	50%	14%	0%	20%	40%	25%
PINK SALMON									
Number Below	5	0	12	3	6	6	3	2	9
Number Met	18	4	7	12	9	10	11	11	7
Number Above	4	22	4	11	12	10	11	13	10
% Below	19%	0%	52%	12%	22%	23%	12%	8%	35%
% Met	67%	15%	30%	46%	33%	38%	44%	42%	27%
% Above	15%	85%	17%	42%	44%	38%	44%	50%	38%
SOCKEYE SALMON									
Number Below	5	4	6	0	2	3	3	5	3
Number Met	14	13	18	21	17	15	15	9	16
Number Above	11	13	4	8	11	12	11	16	11
% Below	17%	13%	21%	0%	7%	10%	10%	17%	10%
% Met	47%	43%	64%	72%	57%	50%	52%	30%	53%
% Above	37%	43%	14%	28%	37%	40%	38%	53%	37%

Table 19. AYK Region escapements compared to escapement goals for the years 2014 to 2022.

	2014	2015	2016	2017	2018	2019	2020	2021	2022
CHINOOK SALMON									
Number Below	5	3	6	3	3	3	7	6	7
Number Met	8	12	9	14	15	9	9	5	3
Number Above	7	6	3	3	2	10	0	0	1
% Below	25%	14%	33%	15%	15%	14%	44%	55%	64%
% Met	40%	57%	50%	70%	75%	41%	56%	45%	27%
% Above	35%	29%	17%	15%	10%	45%	0%	0%	9%
SUMMER CHUM SALMON									
Number Below	1	1	1	0	0	0	2	3	1
Number Met	1	1	2	1	0	4	3	2	3
Number Above	7	5	4	6	6	2	0	0	1
% Below	11%	14%	14%	0%	0%	0%	40%	60%	20%
% Met	11%	14%	29%	14%	0%	67%	60%	40%	60%
% Above	78%	71%	57%	86%	100%	33%	0%	0%	20%
YUKON RIVER SUMMER CHUM SALMON									
Number Below	1	0	1	0	2	1	0	3	2
Number Met	1	2	1	2	0	1	1	0	0
Number Above	0	0	1	1	1	1	0	0	0
% Below	50%	0%	33%	0%	67%	33%	0%	100%	100%
% Met	50%	100%	33%	67%	0%	33%	100%	0%	0%
% Above	0%	0%	33%	33%	33%	33%	0%	0%	0%
YUKON RIVER FALL CHUM SALMON									
Number Below	1	2	0	0	1	1	2	5	5
Number Met	2	3	1	1	0	3	1	0	0
Number Above	5	3	5	5	5	1	0	0	0
% Below	13%	25%	0%	0%	17%	20%	67%	100%	100%
% Met	25%	38%	17%	17%	0%	60%	33%	0%	0%
% Above	63%	38%	83%	83%	83%	20%	0%	0%	0%
COHO SALMON									
Number Below	1	0	0	0	2	1	1	1	3
Number Met	1	2	3	2	0	2	0	1	0
Number Above	1	2	1	0	0	0	0	0	1
% Below	33%	0%	0%	0%	100%	33%	100%	50%	75%
% Met	33%	50%	75%	100%	0%	67%	0%	50%	0%
% Above	33%	50%	25%	0%	0%	0%	0%	0%	25%
PINK SALMON									
Number Below	0	0	0	0	0	0	0	0	0
Number Met	3	3	3	3	3	3	3	3	3
Number Above	0	0	0	0	0	0	0	0	0
% Below	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Met	100%	100%	100%	100%	100%	100%	100%	100%	100%
% Above	0%	0%	0%	0%	0%	0%	0%	0%	0%

SOCKEYE SALMON									
Number Below	0	0	0	0	0	0	1	1	1
Number Met	2	1	2	0	1	1	3	1	2
Number Above	3	5	4	4	3	5	2	2	0
% Below	0%	0%	0%	0%	0%	0%	17%	25%	33%
% Met	40%	17%	33%	0%	25%	17%	50%	25%	67%
% Above	60%	83%	67%	100%	75%	83%	33%	50%	0%

Table 13.—Westward Region (Alaska Peninsula/Aleutian Islands, Kodiak, and Chignik) Chinook, chum, coho, pink, and sockeye salmon escapements compared to escapement goals for the years 2014 to 2022.

	2014	2015	2016	2017	2018	2019	2020	2021	2022
CHINOOK SALMON									
Number Below	2	2	0	4	2	1	2	3	3
Number Met	1	2	3	0	1	2	2	1	1
Number Above	1	0	1	0	1	1	0	0	0
% Below	50%	50%	0%	100%	50%	25%	50%	75%	75%
% Met	25%	50%	75%	0%	25%	50%	50%	25%	25%
% Above	25%	0%	25%	0%	25%	25%	0%	0%	0%
CHUM SALMON									
Number Below	5	1	2	0	4	2	5	2	2
Number Met	3	4	4	4	2	4	2	2	4
Number Above	0	3	2	3	1	1	0	3	1
% Below	63%	13%	25%	0%	57%	29%	71%	29%	29%
% Met	38%	50%	50%	57%	29%	57%	29%	29%	57%
% Above	0%	38%	25%	43%	14%	14%	0%	43%	14%
COHO SALMON									
Number Below	0	0	2	2	3	1	1	1	2
Number Met	6	5	4	4	3	3	4	5	3
Number Above	0	0	0	0	0	0	0	0	0
% Below	0%	0%	33%	33%	50%	25%	20%	17%	40%
% Met	100%	100%	67%	67%	50%	75%	80%	83%	60%
% Above	0%	0%	0%	0%	0%	0%	0%	0%	0%
PINK SALMON									
Number Below	2	0	4	0	2	0	1	0	0
Number Met	2	1	0	0	2	3	1	2	2
Number Above	0	3	0	4	0	1	2	2	2
% Below	50%	0%	100%	0%	50%	0%	25%	0%	0%
% Met	50%	25%	0%	0%	50%	75%	25%	50%	50%
% Above	0%	75%	0%	100%	0%	25%	50%	50%	50%
SOCKEYE SALMON									
Number Below	6	5	1	1	9	5	7	5	0
Number Met	15	8	15	13	11	14	16	13	22
Number Above	8	15	13	14	7	6	3	9	5
% Below	21%	18%	3%	4%	33%	20%	27%	19%	0%
% Met	52%	29%	52%	46%	41%	56%	62%	48%	81%

Species	System	2014	2015	2016	2017	2018	2019	2020	2021	2022
Chinook salmon	Keta River	Over	Met	Over	Met	Over ^a	Met	Met	Met	Met
	Blossom River	Met	Met	Under	Under	Met ^a	Met	Met	Under	Under
	Chickamin River	Met	Met	Under	Under	Under ^a	Under	Met	Met	Met
	Unuk River	Under	Met	Under	Under	Met	Met	Under	Met	Under
	Stikine River	Met	Met	Under	Under	Under	Under	Under	Under	Under
	Andrew Creek	Met	Met	Under	Under	Under	Met	Under	Under	Met
	King Salmon River	Under	Under	Met	Under	Under	Under	Under	Met	Met
	Taku River	Met	Met	Under	Under	Under	Under	Under	Under	Under
	Chilkat River	Under	Met	Under	Under	Under	Met	Met	Met	Under
	Klukshu (Alsek) River	Met	Over	Under	Under	eliminated				
	Alsek River	Under	Over	Under	Under	Met	Over	Met	Over	Under
	Situk River	Met	Under	Under	Over	Under	Met	Over	Over	Met
	Southern Southeast Summer	Under	Met ^b	Met	Met	Met	Met	Met	Met	Met
	Northern Southeast Inside Summer	Under	Met	Under	Met	Met ^b	Met	Under	Under	Met
	Northern Southeast Outside Summer	Met	Met ^b	Met	Under	Under	Met	Under	Under	Under
Chum salmon	Cholmondeley Sound Fall	Met	Over	Met	Over	Over	Under	Met	Over	Met
	Port Camden Fall	Met	Over	Met	Met	Under	Met	Under	Met	Under
	Security Bay Fall	Met	Over	Met	Over	Met	Met	Met	Under	Under
	Excursion River Fall	Met	Met	Under	Met	Met	Under	Under	Under	Under
	Chilkat River Fall	Met	Met ^c	Met	Met	NA	Met	Under	Met	Over
	Hugh Smith Lake	Over	Met	Met	Met	Met	Met	Met	Met	Met
	Klawock	Met	Over	Over	Met	Over	Met	Met	Met	Met
	Taku River	Met	Met ^d	Met	Met	Met	Met	Met	Met	Met
	Auke Creek	Over	Over	Met	Met	Under	Met	Under	Met	Met
	Montana Creek	Met	Over	Met	Met	Met	Under	Met	Under	NS
Coho salmon	Peterson Creek	Over	Met	Under	Under	Met	NC	Under	Under	Under
	Ketchikan Survey Index	Over	Over	Over	Over	Over	Met	Over	Over	Over
	Sitka Survey Index	Over	Over	Over	Over	Over	Over	Met	Over	Over
	Ford Arm Creek	Over	Over	NA	NA	eliminated				
	Berners River	Over	Over	Met	Met	Under ^e	Over	Under	Met	Met
	Chilkat River	Over	Met	Under	Met	Met	Met	Under	Met	Met
	Lost River	Met	eliminated							
	Tawah Creek (Lost River)		Met	Under	Met	Met	Met	NS	NS	NS
	Situk River	Met	Met	Met	Met	Met	Over	NS	NS	NS ^f
	Tsiu/Tsivat Rivers	Met	Met	Over	Over	Over ^g	NS	Over	NS	NS

Species	System	2014	2015	2016	2017	2018	2019	2020	2021	2022
Pink salmon	Southern Southeast	Over	Met	Met	Met	Met	Met	Met	Over	Met
	Northern Southeast Inside	Under	Met	Under	Met	Under	Under	Under	Met	Met
	Northern Southeast Outside	Over	Over	Met	Over	Met	Met	Met	Met	Met
	Situk River	Under	Met	Under	Met	eliminated				
Sockeye salmon	Hugh Smith Lake	Met	Over	Met	Met	Under	Under	Under	Under	Under
	McDonald Lake	Under	Met	Under	Under	Under	Under	Under	Under	Under
	Mainstem Stikine River	Under	Met	Met	Under	Under	Met	Under	Met	Over
	Tahltan Lake	Over	Over	Over	Met	Under	Over	Under	Over	Over
	Speel Lake	Met	Met ^e	Met	Under	Met	Met	NC	Met	Met
	Taku River	Over	Over	Over	Over	Over	Met	Over ^h	Over	Over
	Redoubt Lake	Met	Met	Met	Over	Over	Over	Over	Over	Over
	Chilkat Lake	Met	Met	Met	Met	Met	Met	Under	Under	Met
	Chilkoot Lake	Over	Met	Over	Met	Met	Over	Met	Over	Met
	East Alsek-Doame River	Met	Met	Met	Met	eliminated				
	East Alsek River					Met	Over	Met	Over	Met
	Klukshu River	Over	Over	Under	Under	Under	Over	Under	Over	Over
	Lost River	NA	Under	Under	NS	eliminated				
	Situk River	Over	Over	Met	Over	Under	Over	Met	Over	Over

Note: NA = data not available; NC = no count; NS = no survey. Blank cells indicate that there was no official escapement goal for the stock in that particular year

Species	System	2014	2015	2016	2017	2018	2019	2020	2021	2022
Chinook salmon	<i>Bristol Bay</i>									
	Nushagak River	Met	Met	Met	Under	Met	Under	Under	Under	Under
	Naknek River	NS	Under	eliminated						
	Alagnak River	NS	Under	Under	Under	Under	eliminated			
	<i>Upper Cook Inlet</i>									
	Alexander Creek	Under	Under	Under	Under	Under	Under	Under ^a	Under	NC
	Campbell Creek	Under	Met	Met	Met	Under	Met	Under	Under	Met
	Chuitna River	Met	Met	Met	Under	Under	Met	Under ^a	Under	NC
	Chulitna River	Under	Met	Under	NC	Under	Met	Under ^a	Met	NC
	Clear (Chunilna) Creek	Met	Met	NS	Under	Under	Met	Eliminated		
	Crooked Creek	Met	Met	Over	Met	Met	Met	Met ^a	Under	Met
	Deshka River	Met	Met	Met	Under	Under	Under	eliminated		
	Deshka River							Met	Over	Under
	Eastside Susitna River							Met	Met	Under
	Goose Creek	Under	NC	NC	Under	Under	NC	eliminated		
	Kenai River - early run (all fish)	Met	Met	NA	eliminated					
	Kenai River - early run (large fish)				Over	Under	Met	Under	Met	Under
	Kenai River - late run (all fish)	Met	Met	NA	eliminated					
	Kenai River - late run (large fish)				Met	Met	Under	Under	Under	Under
	Lake Creek	Met	Met	Met	Under	Under	Met	eliminated		
	Lewis River	Under	NA	Under	NA	Under	Under	eliminated		
	Little Susitna River	Met	Met	Met	Met	Under	Met	Met	Met	Met
	Little Willow Creek	Met	Met	Met	Met	Under	Met	eliminated		
	Montana Creek	Under	Met	Under	Under	Under	Under	eliminated		
	Peters Creek	Met	Met	Met	Under	Met	Met	eliminated		
	Prairie Creek	Under	Met	Under	Under	Under	Under	eliminated		
	Sheep Creek	Under	NC	NC	NC	Under	NC	eliminated		
	Talachulitna River	Met	Met	Met	Under	Under	Met	eliminated		
	Talkeetna River							Under	Met	Under
	Theodore River	Under	Under	Under	Under	Under	Under	Under ^b	Under	NC
	Willow Creek	Under	Met	Met	Under	Under	Under	eliminated		
	Yentna River							Under	Met	Met

Species	System	2014	2015	2016	2017	2018	2019	2020	2021	2022
Chinook salmon (cont.)	<i>Lower Cook Inlet</i>									
	Anchor River	Under	Over	Met	Met ^b	Under	Met	Under	Met	Under
	Deep Creek	Met	Met	NS	Met ^c	Under	Met	Under	NS	NS
	Ninilchik River	Met	Met	Met	Met ^d	Met	Met	Met	Met	Under
	<i>Prince William Sound</i>									
	Copper River	Under	Met	Under	Met	Met	Met	Under	Under	Met ^e
Chum salmon	<i>Bristol Bay</i>									
	Nushagak River	Met	NS	Met	Met	Met	Met	Under	Under	Under
	<i>Upper Cook Inlet</i>									
	Clearwater Creek	Under	Over	Met	Met ^a	Under	Over	Met	Over	Met

Chum salmon	<i>Bristol Bay</i>									
	Nushagak River	Met	NS	Met	Met	Met	Met	Under	Under	Under
	<i>Upper Cook Inlet</i>									
	Clearwater Creek	Under	Over	Met	Met ^a	Under	Over	Met	Over	Met
	<i>Lower Cook Inlet</i>									
	Port Graham River	Met	Met	Met	Over ^a	Over	Under	Under	Under	Under
	Dogfish Lagoon	Over	Over	Over	Over ^a	Met	Met	Under	Met	Under
	Rocky River	Over	Met	Met	Over ^a	Over	Over	Over	Over	Over
	Port Dick Creek	Under	Over	Over	Met ^b	Under	Met	Under	Met	Met
	Island Creek	Under	Over	Met	Met ^a	Under	Met	Under	Under	Under
	Big Kamishak River	Under	Under	Under	Over ^a	Met	Over	Over	Over	Met
	Little Kamishak River	Met	Met	Met	Over ^a	Met	Over	Over	Over	Over
	McNeil River	Under	Under	Met	Met	Met	Under	Under	Under	Under
	Bruin River	Under	Over	Over	Over ^a	Over	Over	Over	Over	Under
	Ursus Cove	Under	Over	Met	Over ^a	Under	Over	Under	Met	Met
	Cottonwood Creek	Met	Over	Under	Met ^a	Under	Under	Under	Met	Met
	Iniskin Bay	Met	Under	Under	Over ^a	Met	Over	Met	Over	Met
	<i>Prince William Sound</i>									
	Eastern District	Met	Met	Met	Met	Met ^f	Under	Met	Under	Under
	Northern District	Met	Met	Under	Met	Under ^f	Under	Under	Under	Under
	Coghill District	Met	Met	Met	Met	Met ^f	Under	Under	Under	Under
	Northwestern District	Met	Met	Under	Met	Met ^f	Under	Met	Under	Met
	Southeastern District	Met	Met	Met	Met	Under ^f	Met	Met	Met	Met
Species	System	2014	2015	2016	2017	2018	2019	2020	2021	2022
Coho salmon (cont.)	<i>Upper Cook Inlet</i>									
	Deshka River				Over	Met	Met	NA	NA	NA
	Fish Creek (Knik)	Over	Over	Met	Over	Over	Met	Met ^b	Over	NA
	Jim Creek	Under ^b	Met	Under	Met	Met	Under	Over ^a	Over	Over
	Little Susitna River	Over	Met	Under	Over	Under	Under	Met ^d	Met	Under
	<i>Prince William Sound</i>									
	Copper River Delta	Met	Met	Over	Met	Met	Met	Met	Met	Under ^b
	Bering River	Met	Met	Met	Met	Met	Under	Met	Met	Under ^b
Pink salmon	<i>Bristol Bay</i>									
	Nushagak River	Met	NS	NS	NS	Met	NS	NS	NS	NS
	<i>Lower Cook Inlet</i>									
	Humpy Creek	Met	Met	Over	Over ^a	Over	Met	NS	Under	Under
	China Poot Creek	Under	Met	Under	Under ^a	Under	Under	Under	Under	Under
	Tutka Creek	Met	Over	Over	Over	Over	Over	Over	Over	Over
	Barabara Creek	Met	Over	Met	Over ^a	Over	Over	Over	Met	Met
	Seldovia Creek	Met	Over	Under	Met ^a	Over	Under	Over	Met	Under
	Port Graham River	Over	Over	Met	Over ^b	Over	Over	Over	Met	Met
	Dogfish Lagoon Creeks	Over	Over	Met	Over ^a	Over	Over	Over	Over	Over
	Port Chatham	Met	Over	Under	Over ^b	Over	Over	Met	Over	Under
	Windy Creek Right	Met	Over	Under	Met ^a	Met	Over	Over	Over	Over
	Windy Creek Left	Met	Over	Under	Met ^a	Met	Met	Over	Met	Over
	Rocky River	Met	Over	Under	Met ^a	Under	Over	Under	Met	Met
	Port Dick Creek	Met	Over	Under	Over ^a	Over	Over	Over	Over	Met
	Island Creek	Over	Over	Under	Met ^a	Under	Over	Met	Over	Under
	S. Nuka Island Creek	Met	Met	Under	Under ^a	Under	Under	Met	Met	Under
	Desire Lake Creek	Under	Over	Under	Met ^a	Met	Met	Under	Met	Met
	Bruin River	Met	Met	Met	Met ^a	Met	Met	Met	Met	Under
	Sunday Creek	Met	Over	Under	Met ^a	Under	Met	Met	Over	Under
	Brown's Peak Creek	Met	Over	Under	Over ^a	Under	Over	Over	Over	Under
	<i>Prince William Sound</i>									
	Eastern District (even years)	Met		Over		Met ^f		Met		Over Easter
Northern District (even years)	Under	Met	Met ^f	Met		Over				

Species	System	2014	2015	2016	2017	2018	2019	2020	2021	2022
Pink salmon (cont.)	<i>Prince William Sound (cont.)</i>									
	Coghill District (even years)	Met		Met		Met ^f		Met		Met
	Coghill District (odd years)		Over		Met	^f	Met		Over Northwestern D	
	Eshamy District (even years)	Over		NA		Over ^f		Over		Over Esha
	years)		Over		Over	^f	Under		Over	
Sockeye salmon	Montague District (even years)	Under		NA		Over ^f		Over		Over Mon
	years)		Over		Met	^f	Met		Over	
	<i>Bristol Bay</i>									
	Kvichak River	Met	Met	Met	Met	Met	Met	Met	Met	Met
	Alagnak River	Under	Met	Met	Met	Met	Met ^g	Met	Met	Met
	Naknek River	Over	Met ^b	Met	Met	Over	Over	Over	Over	Met
	Egegik River	Met	Over ^b	Met	Over	Met	Over	Over	Met	Met
	Ugashik River	Met	Over ^b	Over	Met	Met	Over	Over	Over	Over
	Wood River	Over	Over ^b	Met	Over	Over	Over	Over	Over	Over
	Igushik River	Over	Over ^b	Over	Over	Over	Met	Met	Over	Met
	Nushagak River	Met	Over	Met	Over	Over	Met	Over	Over	Over
	Togiak River	Met	Met	Met	Met	Over	Over	Met	Over	Met
	<i>Upper Cook Inlet</i>									
	Fish Creek (Knik)	Met	Over	Met	Over ^a	Over	Over	Over	Over	Over
	Kasilof River	Over	Over	Met	Met	Met	Met	Over ^a	Over	Over
	Kenai River	Met	Met	Met	Na ^h	Met	Over	Over ^a	Over	Met
	Packers Creek	Met	Met	NA	Met	Met	Under	Met	Met	Met
	Russian River - Early Run	Over	Over	Met	Met	Over	Over	Met	Over	Over
	Russian River - Late Run	Met	Met	Met	Met	Met	Met	Met ^a	Over	Over
	Chelatna Lake	Met	Over	Met	Met ^b	Met	Met	NS	NS	NS
	Judd Lake	Under	Met	NA	Met ^a	Met	Over	Met	Over	Met
	Larson Lake	Under	Met	Under	Met ^b	Met	Under	Under	Met	Met

Species	System	2014	2015	2016	2017	2018
	2019	2020	2021	2022		
Sockeye salmon (cont.)	<i>Lower Cook Inlet</i>					
	English Bay	Met	Met	Met	Over	Over
	Delight Lake	Over	Under	Under	Met ^a	Over
	Desire Lake	Met	Under	Under	Met ^a	Met
	Bear Lake	Over	Over	Over	Over	Over
	Aialik Lake	Under	Under	Under	Met ^a	Under
	Mikfik Lake	Over ⁱ	Met	Met	Met ^b	Met
	Chenik Lake	Over	Over	Over	Over ^a	Met
	Amakdedori Creek	Over	Over	Met	Met ^d	Met
	<i>Prince William Sound</i>					
	Upper Copper River	Over	Over	Met	Met	Met
	Copper River Delta	Met	Met	Under	Met	Met
	Bering River	Under	Met	Met	Met	Under
	Coghill Lake	Met	Under	Under	Met	Over
	Eshamy Lake	NA	NA	NA	NA	NA

Note: NA = data not available; NC = no count; NS = no survey. There are no escapement goals for coho salmon in Lower Cook Inlet and there are no pink salmon escapement goals in Upper Cook Inlet. Blank cells indicate that there was no official escapement goal for the stock in that particular year.

Species	System	2014	2015	2016	2017	2018	2019	2020	2021	2022
Chinook salmon	<i>Kuskokwim Area</i>									
	North (Main) Fork Goodnews R	Under	Met	Met	NS	NS	Met	Met	Met	NS
	Middle Fork Goodnews River	Under	Under	Over	Over	NS	Over ^a	NS	NS	NS
	Kanektok River	Under	Met	Met ^b	NS	Met	Met	Met	Met	NS
	Kuskokwim Area (entire area)	Met	Met	Met	Met	Met	Over	Met	Met	Met
	Kogruklu River	Under	Met	Met	Met	Met	Over	Met	Met	Met
	Kwethluk River	Under	Over	NA	Met	NA	Over	NS	NS	Met
	George River	Met	Met	Met	Over	Over	Over	Met	Met	Over
	Kisaralik River	Met	Met	Met	NS	Met	Met	Under	NS	NS
	Aniak River	Over	NS	Under	Met	Met	Over	Met	NS	NS
	Salmon River (Aniak R)	Met	Met	NS	Met	Met	Met	Under	NS	NS
	Holitna River	NS	Under	Met	Under	Met	eliminated			
	Cheeneetuk River (Stony R)	Met	NS	Under	Met	Met	Over	Met	NS	NS
	Gagayah River (Stony R)	Met	Under	Under	Met	Met	Met	NS	NS	NS
	Salmon River (Pitka Fork)	Over	Over	Met	Met	Met	Over	Met	NS	NS
	<i>Yukon River</i>									
	East Fork Andreafsky River	Over	Over	Met	Met	Met	Over	NS	Under	NS
	West Fork Andreafsky River	Over	NS	NS	Met	Under	Met	Under	NS	NS
	Anvik River	Met	Over	NS	Met	Met	Met	Under	NS	Under
	Nulato River (forks combined)	NS	Met	NS	Met	Under	Met	Under	NS	Under
	Chena River	Over	Over	Over	Met	Over	Under	NS	Under	Under
	Salcha River	NS	Met	Under	Met	Met	Met	NS	Under	Under
	Canada Mainstem	Over	Over	Over	Over	Met	Under	Under	Under	Under
	<i>Norton Sound</i>									
	Fish River/Boston Creek	NS	Met	eliminated						
	Kwiniuk River	Met	Met	Under ^c	Under	Under	Under	Met	Under	Under
	North River (Unalakleet R)	Over	Met	Under	Under	Met	Over	Under	Under	Under
	Unalakleet/Old Woman River	NS	NS	eliminated						
Chum salmon	<i>Kuskokwim Area</i>									
	Middle Fork Goodnews River	Under	Under	Met	Met	NS	Met	NA	NS	NS
	Kogruklu River	Met	Met	Met	Over	Over	Over	Met	Under	Under
	Aniak River	NA	NA	eliminated						
	<i>Yukon River Summer Chum</i>									
	Yukon River Drainage			Over	Over	Over	Over	Met	Under	Under
	East Fork Andreafsky River	Under	Met	Met	Met	Under	Met	NS	Under	NS
	Anvik River	Met	Met	Under	Met	Under	Under	NS	Under	Under
	<i>Yukon River Fall Chum</i>									
	Yukon River Drainage	Over	Met	Over	Over	Over	Met	Under	Under	Under
	Tanana River	Over	Met	Over	Over	Over	eliminated			
	Delta River	Over	Over	Over	Over	Over	Over ^b	Met	Under	Under
	Upper Yukon River Tributaries	Met	Met	eliminated						
	Teedriinjik (Chandalar) River	Over	Over	Over	Over	Over	Met ^b	NS	Under	Under
	Sheenjek River	Met	Under	eliminated						
	Fishing Branch River (Canada)	Under	Under	Met	Met	Under	Under	Under	Under	Under
	Yukon R. Mainstem (Canada)	Over	Over	Over	Over	Over	Met	NA	Under	Under
	<i>Norton Sound</i>									
	Subdistrict 1 Aggregate	Over	Over	Over	Over	Over	eliminated			
	Nome River	Over	Over	Over	Over	Over	Met ^b	Met	Under	Met
	Snake River	Over	Over	Over	Over	Over	Met ^b	Under	Met	Over
	Eldorado River	Over	Over	Over	Over	Over	Over ^b	Met	Met	Met
	Niukluk River	NA	NS	eliminated						
	Kwiniuk River	Over	Over	Under	Over	Over	Met ^b	Under	Under	Met
	Tubutulik River	NS	NS	NS	NS	NS	NS ^b	NS	NS	NS
	Unalakleet/Old Woman River	NS	NS	eliminated						
	<i>Kotzebue Sound</i>									
	Kotzebue Sound Aggregate						eliminated			
	Noatak and Eli Rivers	Over	NS	NS	NS	NS	NS ^b	NS	NS	NS
	Upper Kobuk w/Selby River	Over	NS	NS	NS	NS	NS ^b	NS	NS	NS
	Salmon River	NS	NS	NS	NS	NS	eliminated			
	Tutuksuk River	NS	NS	NS	NS	NS	eliminated			
	Squirrel River	NS	NS	NS	NS	NS	eliminated			

Species	System	2014	2015	2016	2017	2018	2019	2020	2021	2022
Coho salmon	<i>Kuskokwim Area</i>									
	Middle Fork Goodnews River	NA	Met	NS	NS	NS	NS	NS	NS	NS
	Kogrukluk River	Over	Over	NS	NS	Under	Met	NA	Met	NS
	Kwethluk River	Met	Met	Met	Met	NS	Met	NS	NS	Under
	<i>Yukon River</i>									
	Delta Clearwater River	Under	Over	Met	Met	Under	Under	Under	Under	Under
	<i>Norton Sound</i>									
	Kwiniuk River	NS	NS	Over	NS	NS	NS	NS	NS	Over
	Niukluk River	NS	NS	eliminated						
	Niukluk River/Ophir Creek			Met	NS	NS	NS	NS	NS	Under
	North River (Unalakleet R.)	NS	NS	NS	NS	NS	NS	NS	NS	NS
Pink salmon	<i>Norton Sound</i>									
	Nome River (odd years)		Met		Met		Met		Met	
	Nome River (even years)	Met		Met		Met		Met		Met
	Kwiniuk River	Met	Met	Met	Met	Met	Met	Met	Met	Met
	Niukluk River	NS	NS	eliminated						
	North River	Met	Met	Met	Met	Met	Met	Met	Met	Met
Sockeye salmon	<i>Kuskokwim Area</i>									
	North (Main) Fork Goodnews River	NS	Over	Over ^b	NS	NS	Over	Over	Over	NS
	Middle Fork Goodnews River	Over	Over	Over	Over	NS	Over ^b	Under	NS	NS
	Kanektok River	Over	Over	Over ^b	NS	Over	Over	Over	Over	NS
	Kogrukluk River	Met	Met	Met	Over	Over	Over	Met	Met	Met
	<i>Norton Sound</i>									
	Pilgrim River (Salmon Lake)	Met	Over	Over	Over	Over	Met ^d	Met	Under	Under
	Glacial Lake	Over	Over	Met	Over	Met	Over	Met	NS	Met

Note: NA = data not available; NS = no survey. There are no escapement goals for pink salmon in the Kuskokwim Area and Yukon River and there are no escapement goals for sockeye salmon in the Yukon River. Blank cells indicate that there was no official escapement goal for the stock in that particular year.

Species	System	2014	2015	2016	2017	2018	2019	2020	2021	2022
Chinook salmon	<i>AK Peninsula</i>									
	Nelson River	Met	Met	Over	Under	Over	Over ^a	Met	Met	Met
	<i>Chignik</i>									
	Chignik River	Over	Met	Met	Under	Under	Met	Under	Under	Under
	<i>Kodiak</i>									
	Karluk River	Under	Under	Met	Under	Met	Met	Met	Under	Under
	Ayakulik River	Under	Under	Met	Under ^b	Under	Under	Under	Under	Under
Chum salmon	<i>AK Peninsula</i>									
	Northern District	Met	Met	Over	Met	Met	Met	Under	Under	Met
	Northwestern District	Under	Under	Met	Met	Under	Met	Under	Under	Under
	Southeastern District	Under	Over	Met	Over	Under	Met ^c	Met	Met	Met
	South Central District	Met	Over	Over	Over	Over	Over ^c	Met	Over	Over
	Southwestern District	Under	Over	Met	Over	Under	Under ^c	Under	Over	Under
	<i>Chignik</i>									
	Entire Chignik Area	Met	Met	Met ^c	Met	Under	Met	Under	Over	Met
	<i>Kodiak</i>									
	Mainland District	Under	Met	Under	eliminated					
	Kodiak Archipelago Aggregate	Under	Met	Under	Met ^c	Met	Under	Under	Met	Met
Coho salmon	<i>AK Peninsula</i>									
	Nelson River	Met	Met	Met	Met	Met	Met	Met	Met	Met
	Ilnik River	Met	Met	Met	Under	Met	Met	Met	Met	Met
	<i>Kodiak</i>									
	Pasagshak River	Met	Met	Under	Under	Met	Under	Met	Met	Under
	Buskin River	Met ^b	NA	Under	Met	Under	Met	NA ^d	Met	NA
	Olds River	Met	Met	Met	Met	Under	NA	Met ^e	Met	Met
	American River	Met	Met	Met	Met	Under	NA	Under	Under	Under
Pink salmon	<i>AK Peninsula</i>									
South Peninsula Total (odd years)	Over	eliminated								

Species	System	2014	2015	2016	2017	2018	2019	2020	2021	2022
Pink salmon (cont.)	<i>AK Peninsula (cont.)</i>									
	South Peninsula Total			Under	Over	Under	Over	Met	Over	Over
	<i>Chignik</i>									
	Entire Chignik Area (odd year)		Over Met	^c Over	Over					
	Entire Chignik Area (even year)	Met		Under ^c		Under		Under		Over
	<i>Kodiak</i>									
	Mainland District	Met	Met	Under	Over	Met	Met	Over	Met	Met
	Kodiak Archipelago (odd years)		Over		Over		Met		Met	
	Kodiak Archipelago (even years)	Under		Under		Met		Over		Met

Sockeye Salmon

Cinder River	Over	Over	Over ^b	Over	Over	Over	Over	Met	Over
Ilnik River	Met	Under	Over	Over	Over	Over	Met	Over	Over
Meshik River	Over	Over	Over ^b	Over	Over	Over	Met	Over	Over
Sandy River	Met	Over	Over	Over	Met	Met	Met	Met	Met
Bear River Early Run	Met	Over	Over	Over	Over	Met	Over	Over	Over
Bear River Late Run	Over	Over	Met	Over	Over	Over	Over	Met	Met
Nelson River	Over	Over	Over	Over	Over	Met	Met	Met	Met
Christianson Lagoon	Met	Under	Over	Over	Met	Met	Under	Over	Met
Swanson Lagoon	Under	Under	Under	Under	Under	eliminated			
North Creek	Met	Over	Over	Met	Met	Over ^b	Met	Met	Met
Orzinski Lake	Under	Over	Over	Over	Under	Under	Under	Over	Met
Mortensen Lagoon	Under	NA	Over	Over	Under	Under	Under	Under	Met
Thin Point Lake	Under	Met	Over	Over	Under	Under	Under	Met	Met
McLees Lake	Met	Met	Met	Met	NA	NA ^f	Under	Met	Met
Chignik River Early Run	Met ^a	Over	Met	Over	Under	Under	Under	Under	Met
Chignik River Late Run	Met	Over	Met	Met	Met	Met	Under	Met	Met
Malina Creek	Met	Met	Met	Met	Under	Under	NA	Met	Met
Afognak (Litnik) River	Met	Met	Met	Met	Under	Met	Met ^d	Met	Met
Uganik Lake	Under	Under	Met	eliminated					

Species	System 2019	2014 2020	2015 2021	2016 2022	2017	2018				
Sockeye salmon (cont.)	<i>Kodiak (cont.)</i>									
	Karluk River Early Run	Over	Over	Met	Met ^b	Met	Met	Met	Under	Met
	Karluk River Late Run	Over	Over	Met	Met ^b	Met	Met	Met	Met	Met
	Ayakulik River Early Run	Met	Met	Met	Met	Met	Met	Met	Met	Met
	Ayakulik River Late Run	Met	Met	Met	Over	Met	Met	Met	Met	Met
	Upper Station River Early Run	Met ^g	Met	Met	Met ^g	Met	Met	Met	Over	Met
	Upper Station River Late Run	Met	Met	Met	Met	Met	Met	Met ^d	Over	Met
	Frazer Lake	Over	Over	Met	Met	Over	Met	Met	Over	Met
	Saltery Lake	Met	Over	Over	Over	Met	Met	Met	Over	Met
	Pasagshak River	Under	Under	Met	Met	Under	NA	Met	Under	Met
	Buskin Lake	Over	Over	Over	Met	Under	Over	Met	Under	Over

Note: NA = data not available. There are no coho salmon escapement goals in Chignik Area. Blank cells indicate that there was no official escapement goal for the stock in that particular year.

12.6 Appendix 6. Meeting Summary: CSI Alaska Salmon Commercial Fisheries Reassessment Certification Decision Committee meeting

Meeting Summary: CSI Alaska Salmon Commercial Fisheries Reassessment Certification Decision Committee meeting

August 29, 2025.

Purpose of the Meeting

The meeting was convened to present the findings of the reassessment of the Alaska Salmon Commercial Fisheries under the CSI RFM Standard (v2.1) and to allow the Certification Decision Committee to review and determine whether to award, defer, or reject certification.

The Certification Decision Committee **deferred the certification decision** to allow more time for review and clarification. The deferral was primarily due to:

1. Complexity and Scale of the Fishery

- The Alaska salmon fishery is vast and multifaceted, with multiple species, regions, and management systems.
- Committee members needed additional time to fully understand the stock assessments and implications of escapement goal failures.

2. Concerns About Chinook and Chum Salmon

- **Chinook salmon:** Continued poor performance and missed escapement goals raised questions about whether a condition or recommendation should be applied.
- **Chum salmon:** Also showing poor stock status, though some regions showed improvement.

3. Lack of Clear Recommendations in the Report

- Committee members noted that **Table 1**, which outlines strengths and weaknesses, did not include **recommendations** for addressing weaknesses.
- There was a request to **add recommendations** tied to specific **supporting clauses** in the CSI standard.

Next Steps

Committee members agreed to review the report over the weekend and reconvene on Monday to finalize their decision.

The team leader committed to add recommendations to Table 1 and clarifying clause references.

12.7 Meeting Summary: CSI Reassessment Alaska Salmon Commercial Fisheries Certification Committee & Assessment Team Meeting

Meeting Summary: CSI Reassessment Alaska Salmon Commercial Fisheries Meeting – Certification Committee & Assessment Team

On September 11, 2025, a meeting was held between the CSI Certification Committee and the Assessment Team regarding the Alaska Salmon Commercial Fisheries reassessment. The meeting aimed to clarify concerns raised during the certification review and finalize recommendations.

Key Discussion Points

- a) **Escapement Goals:** Concerns were raised about unmet escapement goals for Chinook and Chum salmon. The assessment team clarified that while some goals were not met, management actions (e.g., fishery closures, emergency orders) were in place and effective.
- b) **Stock of Concern Process:** Alaska's multi-tiered system includes emergency order authority, Board of Fisheries management plans, and formal stock of concern listings. These mechanisms were explained in detail.
- c) **Environmental Variability:** Declines in productivity were attributed to changing ocean conditions. The team emphasized the need to consider recalibrating escapement goals based on current productivity levels.
- d) **ESA Petition:** The group discussed NOAA's review of a petition to list Gulf of Alaska Chinook salmon under the Endangered Species Act. The implications for management and certification were considered.

Recommendations: The team agreed to include constructive recommendations tied to specific weaknesses in the fishery, particularly regarding escapement thresholds and mixed-stock fishery challenges.

Update:

The fisheries team modified Table 1 (Strengths and Weaknesses of the Alaska Salmon Commercial Fishery) by:

- Adding Recommendations for each identified weakness.
- Linking Recommendations to Supporting Clauses in the CSI RFM Standard.

On September 16, 2025 the modified table was presented to the CSI Certification Committee. After the members of the Certification Committee reviewed Table 1, the Certification Committee determined to recertify the AK Salmon Commercial Fishery against the RFM Fisheries Standard v.2.1