

Final REVIEW DRAFT

Regulatory Impact Review
for Proposed Amendments to the Fishery Management Plan for Bering
Sea/Aleutian Islands King and Tanner Crabs (Crab FMP) and Proposed
Amendments to Federal Regulations Implementing Economic Data
Reporting Requirements for the Groundfish and Crab Fisheries off Alaska

January 12, 2021

For further information contact: Scott A. Miller, Alaska Regional Office
National Marine Fisheries Service
P.O. Box 21668, Juneau, AK 99802-1668
(907) 586-7416

Abstract:

This Regulatory Impact Review (RIR) examines the benefits and costs of proposed fishery management plan and regulatory amendments affecting Economic Data Reporting (EDR) programs in the Bering Sea and Aleutian Islands management area (BSAI) crab fisheries, the BS American Fisheries Act (AFA) pollock fishery, the BSAI Amendment 80 fisheries, and the Gulf of Alaska (GOA) trawl fisheries. The action Alternatives, analyzed in this RIR would potentially (1) revise authorizations for third party data verification audits, (2) eliminate blind data formatting, (3) standardize data aggregation procedures, (4) change the frequency of EDR information collections, and (5) remove individual EDR program requirements. These potential actions are all amendments to mandatory annual census reporting requirements intended to improve the usability, efficiency, and consistency of the data collection programs and to minimize cost to industry and the Federal government.

List of Acronyms and Abbreviations

Acronym or Abbreviation	Meaning	Acronym or Abbreviation	Meaning
ADF&G	Alaska Department of Fish and Game	NOAA	National Oceanic and Atmospheric Administration
AFA	American Fisheries Act	NPFMC	North Pacific Fishery Management Council
AFSC	Alaska Fisheries Science Center	NPPSD	North Pacific Pelagic Seabird Database
AKFIN	Alaska Fisheries Information Network	Observer Program	North Pacific Observer Program
AKRO	Alaska Regional Office of NMFS	OLE	NMFS Office of Law Enforcement
BSAI	Bering Sea and Aleutian Islands	OMB	Office of Management and Budget
CFR	Code of Federal Regulations	PSMFC	Pacific States Marine Fisheries Commission
CFEC	Alaska Commercial Fisheries Entry Commission	PQS	Processor Quota Share
COAR	Commercial Operators Annual Report	PSC	prohibited species catch
CDQ	Community Development Quota	PPA	Preliminary preferred alternative
Council	North Pacific Fishery Management Council	PRA	Paperwork Reduction Act
CP	catcher/processor	PSEIS	Programmatic Supplemental Environmental Impact Statement
CV	catcher vessel	QS	Quota Share
CPA	Certified Public Accountant	RCR	Registered Crab Receiver
CTR	Compensated Transfer Report	RFA	Regulatory Flexibility Act
CR	Crab Rationalization	RIR	Regulatory Impact Review
DCA	Data Collection Agent	SSPT	Social Sciences Planning Team
DDCA	Designated Data Collection Auditor	SAFE	Stock Assessment and Fishery Evaluation
EDR	Economic Data Report	SAR	stock assessment report
E.O.	Executive Order	SBA	Small Business Act
EEZ	Exclusive Economic Zone	Secretary	Secretary of Commerce
EFH	essential fish habitat	SOW	Statement of Work
EIS	Environmental Impact Statement	TAC	total allowable catch
FMA	Fisheries Monitoring and Analysis	U.S.	United States
FMP	fishery management plan	USCG	United States Coast Guard
FONSI	Finding of No Significant Impact		
FR	<i>Federal Register</i>		
FRFA	Final Regulatory Flexibility Analysis		
ft	foot or feet		
GOA	Gulf of Alaska		
	Individual Processor Quota		
IRFA	Initial Regulatory Flexibility Analysis		
IPA	Incentive Plan Agreement		
lb(s)	pound(s)		
LLP	license limitation program		
LOA	length overall		
m	meter or meters		
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act		
t	tonne, or metric ton		
NAICS	North American Industry Classification System		
NAO	NOAA Administrative Order		
NEPA	National Environmental Policy Act		
NMFS	National Marine Fishery Service		

Table of Contents

<i>Executive Summary</i>	5
1. <i>Introduction</i> 13	
1.1 Statutory Authority	14
1.2 Purpose and Need	14
1.3 History of this Action	15
2. <i>Description of Alternatives</i>	18
2.1 Alternative 1, No Action	18
2.2 Alternative 2	18
2.3 Alternative 3	20
2.4 Comparison of Alternatives	21
3. <i>Description of the Economic Data Reporting Programs</i>	22
3.1 Description of Potentially Affected Fisheries	22
3.2 Background: Current EDR Data Collections	22
Crab rationalization program EDR	22
A80 EDR	24
A91 Chinook salmon EDR	25
Gulf of Alaska trawl EDR	28
Summary overview of EDR variables by EDR form	29
Applications of EDR Data	35
3.3 EDR Program Operations	41
Data Collection to-date: Summary of EDR forms and compliance	41
4. <i>Alternatives Analysis</i>	45
4.1 Analysis of Impacts: Alternative 1, No Action	45
4.2 Analysis of Impacts: Alternative 2, Option 1	50
4.3 Analysis of Impacts: Alternative 2, Option 2	51
4.4 Analysis of Impacts: Alternative 2, Option 3	52
4.5 Analysis of Impacts: Alternative 3, Options 1-4	55
4.6 Affected Small Entities (Regulatory Flexibility Act Considerations)	59
4.7 Management and Enforcement Considerations	61
Alternative 1, No Action, Audit Authorization Incentive	61
Alternative 2, Option 1 Combined with Option 2	61
Alternative 2, Option 3	61
Alternative 3, Options 1 -4	61
4.8 Summation of the Alternatives with Respect to Net Benefit to the Nation	62
5. <i>Magnuson-Stevens Act and FMP Considerations</i>	64
5.1 Magnuson-Stevens Act National Standards	64
5.2 Section 303(a)(9) Fisheries Impact Statement	66
5.3 Council's Ecosystem Vision Statement	66
6. <i>Preparers and Persons Consulted</i>	67
7. <i>Literature cited</i>	69

List of Tables

Table 1	Comparison of the Effects of the Alternatives	10
Table 2	Summary of Effects of the Alternatives.....	12
Table 3	Comparison of the Alternatives.....	21
Table 4	Comparative overview of EDR variables across EDR forms	30
Table 5	Counts of Completed EDR Data Forms by EDR Reporting Year	41
Table 6	Cost Recovery and PSMFC Administrative Costs of the EDR Programs	47
Table 7	EDR Program Costs as Share of Fishery Ex-Vessel Value	48
Table 8	Estimated Number of Respondents, Burden Cost, Implementation Cost and Respondent Total Cost Per Year Associated with Preparation and Implementation of Alaska Economic Data Reports.	50
Table 9	Comparison of Effects of the Alternatives	63

Executive Summary

Currently, four Economic Data Report (EDR) data collection programs are in place under regulations published by NMFS Alaska Region Office (AKRO). These programs represent mandatory annual data reporting requirements for regulated entities participating in the BSAI Crab Rationalization (CR) fisheries, the BSAI American Fisheries Act (AFA) pollock fishery, the BSAI Amendment 80 fisheries, and the GOA Trawl fisheries. The purpose of the EDR program is to gather data and information to improve the North Pacific Fishery Management Council's (Council's) ability to analyze the social and economic effects of the catch share or rationalization programs, to understand the economic performance of participants in these programs, and to help estimate impacts of future issues, problems, or proposed revisions to the programs covered by the EDRs.

The action Alternatives, analyzed in this RIR would potentially (1) revise authorizations for third party data verification audits, (2) eliminate blind data formatting, (3) standardize data confidentiality procedures, (4) change the frequency of EDR information collections, and (5) remove individual EDR program requirements. These potential actions are all amendments to mandatory annual census reporting requirements intended to improve the usability, efficiency, and consistency of the data collection programs and to minimize cost to industry and the Federal government.

The **third-party data verification audits** refer to the audits that the Council recommended as part of the crab EDR program and that NMFS directed Pacific States Marine Fisheries Commission (PSMFC) to conduct in its role as the Data Collection Agent (DCA) in all EDR Programs through mid-2019.

Standardizing data confidentiality procedures refers to revising EDR program regulatory requirements and administrative and analytical protocols related to data confidentiality¹ that are uniquely applied to EDR data, while maintaining the same non-disclosure requirements under federal statutes and administrative rules applied by NMFS Alaska Region for authorized access and use of all confidential fisheries data. Unique requirements currently applied to EDR data include:

Blind data formatting: regulatory restrictions and administrative procedures limiting NMFS personnel and other authorized data users access to information identifying reporting entities in EDR data records, and requiring the DCA to anonymize EDR data records provided to NMFS and other authorized data users by replacing all unique identifiers associated with a data submitter with identifiers that do not reveal the identity of the submitter.

¹ The Council's guideline aggregation standard requires a minimum of five EDR data records (submitted by unique data submitters) for public release of statistical aggregates (e.g., sums or averages) calculated from EDR data. The standard was endorsed by the Council as informal guidance for analytical users of Crab EDR data, and been applied to all public release of statistical summaries of all EDR data. This is in contrast to the three-record minimum standard commonly applied by analysts to other confidential federal fisheries data, noting that a variety of other statistical criteria and minimum thresholds are considered in determinations regarding confidentiality suppression of statistical aggregates.

Purpose and Need

The Council adopted a purpose and need for this in April of 2019. The Council slightly amended the purpose and need and added an alternative to eliminate all EDR requirements in January of 2020. The Council further amended the alternatives by adding an option to change the frequency of EDR submission and to add an alternative to Eliminate EDR requirements for each EDR individually in April of 2021. The following is the amended purpose and need for this action:

The current EDRs may provide valuable information for program evaluation and analysis of proposed conservation and management measures. However, after over ten years of operating the EDR programs, the Council intends to review whether some revisions are needed to improve the usability, efficiency, and consistency of the data collection programs in its responsibility and to minimize cost to industry and the Federal government. This includes evaluation of whether the value of EDRs to management outweighs the cost to industry and NOAA, and/or whether annual submissions of EDRs is necessary. Several revisions could be made to EDRs, specifically on the use of third-party audits and “blind-data” protocols that could reduce the cost of the data collection program to the industry and government while still maintaining the integrity and confidentiality of the data collection program.

Several provisions were implemented to provide a higher standard of confidentiality for proprietary business information reported in EDRs, above those that apply to all other confidential fisheries information. In practice, these provisions have proven to reduce the usability of the data for analysis and increase the cost of the data collection programs without providing additional practical protections. In addition, confidentiality requirements that apply to all data collections may provide sufficient protections for the EDR data.

The GOA Trawl EDR program implemented in 2015 was designed to collect baseline information to assess the impacts of a future catch share program. Data has been collected under this program for 6 years and another year of data will be submitted in June 2022. The Council should re-evaluate the purpose and need for the GOA Trawl EDR, and make adjustments as necessary in either the purpose and need for the program or in the data collection program itself.

Alternatives

Alternative 1: Status Quo

Alternative 2: Make revisions, where needed, in the EDR sections of the crab or groundfish FMPs and in the EDR regulations (options are not mutually exclusive):

Option 1: Remove any requirements for third party data verification audits under the existing programs and reduce burdens associated with this process.

Option 2: Revise requirements for aggregation of data across submitters and blind formatting in the crab data collection program to make those data aggregation and confidentiality protections comparable to the requirements under other data collection programs.

Option 3: Revise EDR collection period to every (options 2 years; 3 years; 5 years)

Alternative 3: Revise or remove the GOA trawl EDR requirements.

Option 1. GOA Trawl

Option 2. Crab

Option 3. BSAI Amendment 80

Option 4. BSAI Amendment 91

Implications of the Alternatives

Alternative 1: No Action

EDR language contained in the Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs (crab FMP), the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area (BSAI FMP), and the Fishery Management Plan for Groundfish of the Gulf of Alaska (GOA FMP) would be unchanged (see appendix A). Regulations implementing the BSAI Crab EDR (680.6), the A80 EDR (679.94), A91 EDR (679.65), and the GOA Trawl EDR (679.110) would remain unchanged.

Alternative 2: Option 1

Alternative 2, Option 1 would remove the EDR data verification audit authorizations in 50 CFR 679 and 680 and the Crab FMP text of section 14.7 as shown in Appendix A. The regulations define the roles of the Data collection agent (DCA) and the Dedicated Data Collection Auditor (DDCA) and state that “the DCA shall...” (680.6), or “NMFS, the DCA, or the DDCA will...” (679 subsections 65, 94, and 110) “conduct verification of information with [a person required to submit the applicable EDR or a designated representative]”. In the subsections that follow this *shall* direction to the DCA, the regulations require the EDR submitter to respond to inquiries from the DCA within 20 days, require the submitter to provide supporting records to the DCA as requested, and authorize the DCA *auditor* to review the records for the purpose of substantiating values reported in the EDR.² The Council’s intent for the verification process, and of the third-party audit in that process, is not explicitly stated in the regulations, and authorizes rather than directs that data verification is accomplished by auditor review of supporting records.

Alternative 2: Option 2

In addition to data confidentiality requirements that apply to other categories of confidential fisheries data, the Council has specified additional protocols for EDR data. Implementing regulations in 50 CFR 679 and 680 for GOA Trawl and Crab EDRs, respectively, presently require that the data collection be conducted by a DCA, and presently limits release of un-aggregated EDR data in blind format only.³ Alternative 2, Option 2, as originally composed, would apply only to the Crab EDR program. **Thus Alternative 2, Option 2 would revise regulations to eliminate the requirements of blind data**

² Under 680.2, “Auditor means an examiner employed by, or under contract to, the data collection agent to verify data submitted in an economic data report.” There is some inconsistency between the 679 and 680 regulations pertaining to NMFS’ access to supporting records and roles of NMFS, the DCA, and the third-party auditor (DDCA) in verification audits; 680.6(f) states the clearest differentiation between the role of the DCA versus the DDCA, and PSMFC’s audit procedures have been developed by AFSC based on the 680.6 specification.

³ Defined in 679.2 and 680.2 as “Blind data means any data collected from an economic data report by the data collection agent that are subsequently amended by removing personal identifiers, including, but not limited to social security numbers, crew permit numbers, names and addresses, Federal fisheries permit numbers, Federal processor permit numbers, Federal tax identification numbers, and State of Alaska vessel registration and permit numbers, and by adding in their place a nonspecific identifier.”

formatting in the Crab EDR programs as identified in Appendix A; however, it would not revise regulations to eliminate the requirements of blind data formatting in the GOA Trawl EDR program.

Under Alternative 2, Option 2 NMFS would also revise data aggregation procedures for EDR data. Due to concerns regarding the sensitivity of proprietary cost data collected in EDRs, the Council requested AFSC to develop enhanced confidential data protocols for EDR data following the initial collection of annual Crab EDRs in 2006.

Based on a review of OMB guidance and best practices for nondisclosure control, and after consulting with ADF&G and AKRO staff, it was determined that a minimum aggregation standard of 5 data records would be employed for public disclosure of aggregate statistics reporting EDR results. This is in contrast to the minimum of three records required for all other federal and state sources of North Pacific fishery data. The enhanced protocol has subsequently been applied by the Pacific States Marine Fisheries Commission (PSMFC/AKFIN) and the Alaska Fisheries Science Center (AFSC) to all public release of statistics derived from EDR Program data. In addition, the Alaska Fisheries Information Network (AKFIN) and AFSC follow federal guidelines for primary and secondary cell suppression described in FCSM (2005).

The Council recommended the enhanced protocol as a guideline rather than a formal requirement implemented in EDR regulations, and AFSC has subsequently applied this standard to all public release of statistical summaries using any EDR program data. Under Alternative 2, Option 2, the Council could effectively rescind the previous Council guideline and recommend that the standards applied to other confidential commercial fisheries data be applied to all EDR programs. As this practice is presently a guideline rather than a rule, this action would not require specific regulatory or FMP amendments and the standard data handling procedures are presently authorized under NMFS and Council reciprocal access agreements, MOAs with ADFG and CFEC, and respective agency administrative rules concerning confidential data.⁴

Alternative 2, Option 3

Alternative 2, Option 3, as specified in the Council's April 2021 motion, considers adding regulatory language to change the "annual" frequency of each EDR information collection chosen under this alternative to specify collection frequency of 2 years, 3 years, or 5 years. Though the Council motion does not specifically identify that frequency could differ for each information collection the analysis of alternatives will consider that possibility. Since this Option is focused on reducing respondent burden it is further assumed that the reporting would be limited to the single year prior to the reporting deadline rather than the cumulative information for all years since the last report was made.

Alternative 3, Options 1-4

Alternative 3, options 1-4, as specified in the Council's April 2021 motion would consider complete removal of each individual EDR information collection and each can be considered individually as they are specified to not be mutually exclusive. Selection of the options under Alternative 3 would result in EDR language related to each EDR information collection being stricken from the associated regulations.

⁴ See Confidentiality Of Fisheries Information, Divisional Operating Procedure (DOP) CF-008, ADF&G Division of Commercial Fisheries. <https://www.admin.adfg.state.ak.us/confluence/display/CCFI/Confidentiality+DOP>., NAO 216-100 Protection of Confidential Fisheries Statistics. https://www.corporateservices.noaa.gov/ames/administrative_orders/chapter_216/216-100.html

Comparison of Alternatives for Decision-making

Each Alternative and option would potentially amend FMP text, regulatory text, EDR data collection forms, and operational procedures. Table 1 identifies what the action would accomplish and then identifies the FMP that would be amended, the regulations that would be amended, whether forms would need to be revised, and what operational procedures would be expected to change. As is shown in the table, Alternative 2, Option 1, removing audit authorizations, will require amendment to the Crab FMP, crab regulations (part 680), groundfish regulations (part 679), several forms, and would eliminate the audit process. Eliminating blind data formatting under Alternative 2, Option 2 also amends the Crab FMP, crab regulations, and groundfish regulations but does not affect EDR forms and retains respondent identifiers within the EDR data. Applying existing data handling standards under Alternative 2, Option 2 would only affect the Council's guideline and its application in data aggregation but would not require either FMP or regulatory amendments. Changing the frequency of information collections under Alternative 2, Option 3 would require regulatory amendments. Eliminating EDR requirements under Alternative 3 would require regulatory amendments for both groundfish and crab, would eliminate forms, and would end the PSMFC data collection process for each EDR selected. FMP language generally authorizes a data collection program and would be retained.

Table 1 Comparison of the Effects of the Alternatives

	Alternative 1	Alternative 2 Option 1	Alternative 2 Option 2	Alternative 2 Option 2	Alternative 2 Option 3	Alternative 3 Options 1-4
Action	Status quo. No action.	Remove independent third party audit authorizations	Eliminate blind formatting of EDR data	Apply existing data handling standards to EDR data	Change frequency of EDR collection	Remove EDR Requirements
Crab FMP		✓	✓		✓	✓
BSAI Groundfish FMP						✓
GOA Groundfish FMP						
Crab regulations (part 680)		✓	✓		✓	✓
Groundfish regulations (part 679)		✓	✓		✓	✓
Forms and instructions		✓			✓	✓
Operational procedures	Audits now only in cases of noncompliance	No audits, data verification continues/suspension of audit reports	DCA retains identifiers in EDR data provided to NMFS	Change in Council guidelines	Changes in reporting and analysis	End data collection/PRA process/PSMFC process

Table 2 provides a qualitative comparison of the potential effects of the alternatives on industry costs, programmatic costs, data usage and availability, incentives for compliance, and enforceability of EDR program regulations. Direct cost to industry of independent third party audits has been procedurally reduced to zero under the status quo, as audits will now only occur in cases of noncompliance.

Alternative 2, Option 1 eliminates the authorization for third party audits and, thus, removes the incentive for accurate and timely reporting. Given that the agencies have acted to minimize the burden of independent third party audits, Alternative 2, Option 1 may have negative implications for net national benefits dependent on whether misreporting becomes a problem absent the compliance incentive of independent third party audits.

Alternative 2, Option 2 would eliminate blind formatting of data and the Council guideline of use of the five record confidentiality standard both of which have effectively diminished the usefulness and practical application of the data for analysis of fishery management issues. In addition, by authorizing NMFS personnel to access identifiers in EDR records, eliminating blind formatting under Option 2 Option 1 would facilitate more effective oversight of EDR data verification processes by NMFS staff, particularly if independent third party audits are reduced or eliminated as under Alternative 2, Option 1, and would improve effective enforcement of EDR submission requirements. Thus, Alternative 2, Option 2 provides net benefits to the nation in terms of improving data use and application in the fishery management and Council process as well as improving the potential for effective enforcement.

Alternative 2, Option 3, would change the frequency one or more EDR information collections. Reducing the frequency of information collections is designed to reduce industry cost of EDR compliance as well as potentially reducing some agency implementation costs. Lowered implementation costs could reduce cost recovery fees charged to industry, except with regard to the GOA Trawl EDR that does not contain a cost recovery element. Thus, Alternative 2, Option 3 would provide net benefits to the nation in terms of reduced costs but may create management and enforcement complications due to non-response and/or non-compliance issues affecting data quality, the need for heightened agency management, and the potential for greater need for enforcement actions and data quality audits.

Alternative 3, Options 1-4 would eliminate individual EDRs. Thus, Alternative 3, Options 1-4 would provide net benefits to the nation in terms of reduced costs in that all industry burden and cost recover fees for any individual EDR chosen for elimination would be removed. Similarly, all agency implementation costs associated with an eliminated EDR would be removed. These cost reductions appear to have positive implications for net national benefits. However, the elimination of the EDRs associated with LAPPs makes the data unavailable for the Council and NMFS to create the annual reports on economic performance and for MSA required LAPP review (e.g., Crab EDR, A80 EDR). Data would not be available to the Council to assist in establishing baseline conditions to develop future catch share programs (e.g., GOA Trawl EDR) or to provide data on fleet operations valuable to analysts when considering future Council actions on salmon bycatch avoidance in the Bering Sea (e.g., A91 EDR). Data collected in the EDRs has been used to develop analyses of Council actions, to monitor bycatch avoidance, and has demonstrated practical value in the fisheries management and the Council process. Elimination of the Crab EDR and A80 EDR would slow the AFSC economics research program's development of the Multi Region Social Accounting Matrix Model (MRSAMM) because analysts would have to rely 100% on voluntary survey data collection with consequent weaknesses of low data accuracy and significant increases in the amount of time and expense required. Thus, elimination of an individual EDRs, while lowering costs, comes with the tradeoff of the loss of the time series data that EDR provides. This will eliminate that source of information and its use in future Council actions, especially the unique crew level information collected in the EDRs (Crab, A80, GOA Trawl).

Table 2 Summary of Effects of the Alternatives

	Alternative 1	Alternative 2 Option 1	Alternative 2 Option 2	Alternative 2 Option 2	Alternative 2 Option 3	Alternative 3 Options 1-4
Action	Status quo. No action.	Remove independent third party data audit authorizations	Eliminate blind formatting of EDR data)	Apply existing data handling standards to EDR data	Change Frequency of EDR data collection	Eliminate the individual EDRs
Impacts						
Industry cost-direct cost	Audits procedurally reduced to ease burden	Potential for audit related cost burden eliminated	No change	No change	Reduced depending on frequency chosen	Reduced
Industry costs-Cost recovery	Procedurally reduced/taxpayer burden remains	Reduced by elimination of programmatic costs	No change	No change	Potentially reduced	Reduced and Taxpayer burden possibly reduced
Programmatic cost (NMFS/PSMFC)	Procedurally reduced	Reduced	No change	No change	Potentially reduced	Reduced
Data use and availability	No change	No change	Improved	Improved	Data less complete	Data eliminated
Compliance incentive	Maintained	Eliminated	No change	No change	No Change	Compliance need eliminated
Enforceability	Procedurally reduced audits/enforceability inhibited by blind formatting	Potentially reduced	Improved, especially if audits are eliminated or amended	No change	No Change	Enforcement need eliminated

1. Introduction

This Regulatory Impact Review (RIR)⁵ examines the benefits and costs of proposed fishery management plan and regulatory amendments affecting Economic Data Reporting (EDR) programs in the Bering Sea and Aleutian Islands management area (BSAI) crab fisheries, the Bering Sea (BS) American Fisheries Act (AFA) pollock fishery, the BSAI Amendment 80 fisheries, and the GOA trawl fisheries. The action Alternatives, Components, and Options analyzed in this RIR would potentially (1) revise authorizations for third party data verification audits, (2) eliminate blind data formatting, (3) standardize data aggregation procedures, (4) change the frequency of EDR information collections, and (5) remove individual EDR program requirements. These potential actions are all amendments to administrative reporting requirements intended to improve the usability, efficiency, and consistency of the data collection programs and to minimize cost to industry and the Federal government.

The preparation of an RIR is required under Presidential Executive Order (E.O.) 12866 (58 FR 51735, October 4, 1993). The requirements for all regulatory actions specified in E.O. 12866 are summarized in the following Statement from the E.O.:

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

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

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

This RIR also addresses the statutory requirements of the Magnuson Stevens Fishery Conservation and Management Act and some of the requirements of the Regulatory Flexibility Act.⁶

⁵ This proposed action has no potential to have an effect individually or cumulatively on the human environment. As such, it is categorically excluded from the need to prepare an Environmental Assessment.

⁶ NMFS Alaska Region has preliminarily determined that none of the alternatives have the potential to have an effect individually or cumulatively on the human environment. This determination is subject to further review and public comment. If this determination is confirmed when a proposed rule is prepared, the proposed action will be categorically excluded from the need to prepare an Environmental Assessment under the National Environmental Policy Act.

1.1 Statutory Authority

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

The groundfish fisheries in the EEZ off Alaska are managed under the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area (BSAI FMP) and the Fishery Management Plan for Groundfish of the Gulf of Alaska (GOA FMP). The King and Tanner crab fisheries in the EEZ off Alaska are managed under the Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs (Crab FMP). The proposed action under consideration would amend these FMPs and Federal regulations at 50 CFR 679 and 50 CFR 680. Actions taken to amend FMPs or implement regulations governing these fisheries must meet the requirements of applicable Federal laws, regulations, and Executive Orders.

1.2 Purpose and Need

The Council adopted a purpose and need for this in April of 2019. The Council slightly amended the purpose and need and added an alternative to eliminate all EDR requirements in January of 2020. The Council further amended the alternatives by adding an option to change the frequency of EDR submission and to add an alternative to Eliminate EDR requirements for each EDR individually in April of 2021. The following is the amended purpose and need for this action:

The current EDRs may provide valuable information for program evaluation and analysis of proposed conservation and management measures. However, after over ten years of operating the EDR programs, the Council intends to review whether some revisions are needed to improve the usability, efficiency, and consistency of the data collection programs in its responsibility and to minimize cost to industry and the Federal government. This includes evaluation of whether the value of EDRs to management outweighs the cost to industry and NOAA, and/or whether annual submissions of EDRs is necessary. Several revisions could be made to EDRs, specifically on the use of third-party audits and “blind-data” protocols that could reduce the cost of the data collection program to the industry and government while still maintaining the integrity and confidentiality of the data collection program.

Several provisions were implemented to provide a higher standard of confidentiality for proprietary business information reported in EDRs, above those that apply to all other confidential fisheries information. In practice, these provisions have proven to reduce the usability of the data for analysis and increase the cost of the data collection programs without providing additional practical protections. In addition, confidentiality requirements that apply to all data collections may provide sufficient protections for the EDR data.

The GOA Trawl EDR program implemented in 2015 was designed to collect baseline information to assess the impacts of a future catch share program. Data has been collected under

this program for 6 years and another year of data will be submitted in June 2022. The Council should re-evaluate the purpose and need for the GOA Trawl EDR, and make adjustments as necessary in either the purpose and need for the program or in the data collection program itself.

1.3 History of this Action

The Council and the NMFS have implemented four programs in the federally managed groundfish and crab fisheries off Alaska. The EDRs gather various levels of ownership, revenue, cost, vessel operations, and employment information from vessel owners, vessel operators, processors, permit holders, and leaseholders who participate in several of the catch share programs in the North Pacific fisheries. The catch share programs that are subject to some form of EDR requirements are the BSAI Crab Rationalization Program, BSAI Amendment 80, and the BS AFA pollock fisheries managed under the American Fisheries Act. In addition, the Council and NMFS also implemented EDR requirements for the GOA trawl catcher vessels and processors in fisheries not yet managed under a catch share program. For the sake of brevity, the individual EDRs are referred to hereafter as the Crab EDR, A80 EDR, A91 EDR, and GOA Trawl EDR, and are collectively termed the EDR Program.

The following four EDRs are addressed in this RIR:

- BSAI Crab EDR, implemented in 2005 (*Crab EDR*);
- Trawl Catcher/Processor (CP) EDR implemented in 2007 for Amendment 80, and in 2015 for CPs operating in the GOA groundfish fisheries (*A80 EDR*);
- BS Chinook salmon bycatch management program EDR for participants in the BS pollock fishery, implemented in 2012 (*A91 EDR*); and
- GOA trawl EDRs for trawl catcher vessels operating in the GOA and processors taking deliveries from these vessels, implemented in 2015 (*GOA Trawl EDR*).

In general, the purpose of the EDR requirements are to gather information to improve the Council's ability to analyze the economic effects of the catch share or rationalization programs, to understand the economic performance of participants in these programs, and to help estimate impacts of future issues, problems, or proposed revisions to the programs covered by the EDRs. For example, the EDR implemented for GOA trawl catcher vessels and processors not managed under a catch share program was implemented to collect relevant baseline information that could be used to assess the impacts of a future catch share program on affected harvesters, processors, and communities in the GOA (NPFMC, 2014 and 79 FR 71313; December 2, 2014). The BS Chinook salmon bycatch EDR was implemented to provide additional data to assess the effectiveness of the Chinook salmon bycatch management measures in the BS pollock fishery (77 FR 5389; February 3, 2012).

The Council has discussed the current EDR programs since development of the Crab Rationalization Program in the early 2000s. Additional history of the EDRs is in section 3.1 of this RIR. More recently, the Council discussed the EDRs in several meetings during 2018. Public testimony at the February 2018 Council meeting noted that the EDR programs had been in effect for some time, and industry was spending time and money to complete the reports, in some cases reimbursing NMFS for the administrative costs of the EDR programs through catch share cost recovery programs. The testifier suggested that the Council review the EDR requirements to determine whether and how the data was being used, whether it was being collected efficiently, and whether the data collection programs were meeting the Council's needs.

In April 2018, the Council reviewed a discussion paper prepared by NMFS that provided information related to NMFS's request that the Council review all its regulations to identify any that were outdated, unnecessary, ineffective or could be further streamlined (NMFS, 2018a). This discussion paper included reference to the Council's February 2018 discussion of the EDR requirements as a possible area of regulations for future Council review. In addition, at the April 2018 meeting, the Council also heard public testimony raising the question of whether the EDR requirements for the GOA trawl catcher vessels and processors had met Council's purpose and need to collect baseline information to assess the impacts of a potential future catch share program in those fisheries.

Later in the April 2018 meeting, in response to this public comment and further discussion among Council members, the Council requested that NMFS prepare a discussion paper that describes the EDR requirements for all programs, explains how the data are used, and provides estimates of the costs of complying with the EDR requirements. The Council's motion stated that the Council could then use the information in the discussion paper to determine if revisions to EDR requirements are needed and, if so, the priority and process for analysis of proposed revisions.

NMFS presented this discussion paper to the Council in April 2019. The EDR discussion paper included, in Chapter 6, an EDR Program Assessment and Recommendations. Within that chapter NMFS provided the following set of shorter term practical recommendations aimed at reducing costs and burdens as well as improving data utility by streamlining data access.

- Reduce costs and burden
 - Eliminate routine third-party data verification audits and limit the audit requirement to instances of gross noncompliance with EDR submission requirements or where intentional strategic misreporting is indicated or suspected. NMFS will continue to research the degree of flexibility we have to minimize requirements under existing regulations, and which types of modifications will require FMP and regulatory amendments to implement.
 - Review duplication of reporting requirements in EDR Program.
- Improve data utility by streamlining data access
 - Re-assess EDR-specific data protocols to improve utility and efficiency while maintaining confidential data protections: specify blind-data rule on the basis of a) analytical users, and b) EDR administration users, and reconsider rule-of-5 aggregation standard.

In addition to the shorter term practical recommendations the analysts provided a set of longer term recommendations as follows.

- Develop a systematic approach to identifying and prioritizing the Council's needs for economic and social science information. This includes identifying relevant analytical and performance metrics, minimum requirements for accuracy and precision of information outputs, and a framework for balancing tradeoffs between all relevant dimensions of information quality and system costs.
 - Review survey population and survey frequency for EDR variables and consider survey administration alternatives, including changes in the method, frequency, and respondent population of data collections to achieve the Council's analytical objectives.

- Improve application of National Standard 2 Guidelines to information *processes* in EDR program oversight and ensure clearer distinctions between *scientific information* from other information content.
- Minimize disincentives for voluntary industry cooperation with data collection efforts and address concerns regarding confidentiality, cumulative reporting burden, and negative consequences of revealing profitability and other financial information to the federal government.

The Council reviewed the requested EDR discussion paper during its April 2019 meeting and requested further analysis under two issues.

Under Issue 1, the Council adopted a purpose and need statement (see above) and the initial set of alternatives that are addressed in this RIR in April of 2019. In January of 2020, the Council amended the purpose and need and added an alternative to eliminate all EDRs. In April of 2021 the Council further amended the alternatives to add an alternative to consider frequency of EDRs (Alternative 2 option 3) and alternative to consider eliminating each of the individual EDRs (Alternative 4, Options 1-4).

Under Issue 2, the Council recommended that the staff undertake a process to propose revisions to the current EDR programs, including the GOA trawl EDR, with specific consideration for the following.

- 1) The Council's previously stated needs for economic and social science information and the utility of data for analysis of impacts of Council actions and for research that provides a better understanding of the impacts of future actions;
- 2) Data that are also collected in other data collection programs (such as the Commercial Operators Annual Reports) which may be duplicative and unnecessary to collect as a part of EDRs;
- 3) Alternatives for creating more consistency across EDRs to increase the utility of economic and social information in analyses of Council actions and management program reviews and to support research that provides a better understanding of the impacts of future actions; and
- 4) Tradeoffs between aggregation of elements used to reduce reporting burden by streamlining collection and the effects of the loss of detail from that aggregation on the accuracy of resulting analyses.

The comprehensive review of EDR programs (Issue 2) was undertaken by the Council's Social Sciences Planning Team (SSPT). The SSPT provided a report to the Council about its progress on this issue at the February 2020 meeting. Following review of the SSPT report, the Council further instructed the SSPT to engage in a series of outreach meetings to engage EDR stakeholders in evaluating the EDR program overall as well as each individual program. Virtual outreach meetings were held in 2020 and the final SSPT outreach reports were presented to the Council in April of 2021 along with a SSPT Chairman's report detailing the SSPT process and major findings. The reports of the SSPT, both the written reports and PowerPoint presentations are incorporated here by reference (NPFMC 2020a, b). However, some of the outreach report content is excerpted for this analysis to present stakeholder input on changes in the frequency of the EDR information collections.

Following receipt of The SSPT reports the Council took action in a motion on April 16, 2021. That motion did not change the purpose and need, as amended in January of 2020, changed "component" to "option" with options not mutually exclusive, and converted component 3 to a new alternative with four options to remove EDR requirement of each EDR with those options not being mutually exclusive. The

motion also added a new Option 3 to Alternative 2 that would change the frequency of EDR information collections from annually to options of 2 years, 3 years, and 5 years. The amended alternative set is presented in the next section.

2. Description of Alternatives

The Council adopted the following alternatives for analysis in April of 2021.

Alternative 1: Status Quo

Alternative 2: Make revisions, where needed, in the EDR sections of the crab or groundfish FMPs and in the EDR regulations (options are not mutually exclusive):

Option 1: Remove any requirements for third party data verification audits under the existing programs and reduce burdens associated with this process.

Option 2: Revise requirements for aggregation of data across submitters and blind formatting in the crab data collection program to make those data aggregation and confidentiality protections comparable to the requirements under other data collection programs.

Option 3: Revise EDR collection period to every (options 2 years; 3 years; 5 years)

Alternative 3: Revise or remove the GOA trawl EDR requirements.

Option 1. GOA Trawl

Option 2. Crab

Option 3. BSAI Amendment 80

Option 4. BSAI Amendment 91

2.1 Alternative 1, No Action

EDR language contained in the Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs (crab FMP), the Fishery Management Plan for Groundfish of the Bering Sea and Aleutian Islands Management Area (BSAI FMP), and the Fishery Management Plan for Groundfish of the Gulf of Alaska (GOA FMP) would be unchanged (see appendix A). Regulations implementing the BSAI Crab EDR (680.6), the A80 EDR (679.94), A91 EDR (679.65), and the GOA Trawl EDR (679.110) would remain unchanged.

2.2 Alternative 2

Alternative 2, Option 1 would remove the EDR data verification audit authorizations in 50 CFR 679 and 680 and the Crab FMP text of section 14.7 as shown in Appendix A. The regulations define the roles of the Data collection agent (DCA) and the Dedicated Data Collection Auditor (DDCA) and state that “the DCA shall...” (680.6), or “NMFS, the DCA, or the DDCA will...” (679 subsections 65, 94, and 110) “conduct verification of information with [a person required to submit the applicable EDR or a designated representative]”. In the subsections that follow this *shall* direction to the DCA, the regulations require the EDR submitter to respond to inquiries from the DCA within 20 days, require the submitter to provide supporting records to the DCA as requested, and authorize the DCA *auditor* to review the records for the

purpose of substantiating values reported in the EDR.⁷ The Council's intent for the verification process, and of the third-party audit in that process, is not explicitly stated in the regulations, and authorizes rather than directs that data verification is accomplished by auditor review of supporting records.

In addition to data confidentiality requirements that apply to other categories of confidential fisheries data, the Council has specified additional protocols for EDR data. Implementing regulations in 50 CFR 679 and 680 for GOA Trawl and Crab EDRs, respectively, presently require that the data collection be conducted by a DCA, and presently limits release of un-aggregated EDR data in blind format only.⁸ Alternative 2, Option 2, as originally composed, would apply only to the Crab EDR program. Thus Alternative 2, Option 2 would revise regulations to eliminate the requirements of blind data formatting in the Crab EDR programs as identified in Appendix A; however, it would not revise regulations to eliminate the requirements of blind data formatting in the GOA Trawl EDR program.

Under Alternative 2, Option 2 NMFS would also revise data aggregation procedures for EDR data. Due to concerns regarding the sensitivity of proprietary cost data collected in EDRs, the Council requested AFSC to develop enhanced confidential data protocols for EDR data following the initial collection of annual Crab EDRs in 2006.

Based on a review of OMB guidance and best practices for nondisclosure control, and after consulting with ADF&G and AKRO staff, it was determined that a minimum aggregation standard of 5 data records would be employed for public disclosure of aggregate statistics reporting EDR results. This is in contrast to the minimum of three records required for all other federal and state sources of North Pacific fishery data. The enhanced protocol has subsequently been applied by the Pacific States Marine Fisheries Commission (PSMFC/AKFIN) and the Alaska Fisheries Science Center (AFSC) to all public release of statistics derived from EDR Program data. In addition, the Alaska Fisheries Information Network (AKFIN) and AFSC follow federal guidelines for primary and secondary cell suppression described in FCSM (2005).

The Council recommended the enhanced protocol as a guideline rather than a formal requirement implemented in EDR regulations, and AFSC has subsequently applied this standard to all public release of statistical summaries using any EDR program data. Under Alternative 2, Component 2, the Council could effectively rescind the previous Council guideline and recommend that the standards applied to other confidential commercial fisheries data be applied to all EDR programs. As this practice is presently a guideline rather than a rule, this action would not require specific regulatory or FMP amendments and the standard data handling procedures are presently authorized under NMFS and Council reciprocal access agreements, MOAs with ADFG and CFEC, and respective agency administrative rules concerning confidential data.⁹

⁷ Under 680.2, "Auditor means an examiner employed by, or under contract to, the data collection agent to verify data submitted in an economic data report." There is some inconsistency between the 679 and 680 regulations pertaining to NMFS' access to supporting records and roles of NMFS, the DCA, and the third-party auditor (DDCA) in verification audits; 680.6(f) states the clearest differentiation between the role of the DCA versus the DDCA, and PSMFC's audit procedures have been developed by AFSC based on the 680.6 specification.

⁸ Defined in 679.2 and 680.2 as "Blind data means any data collected from an economic data report by the data collection agent that are subsequently amended by removing personal identifiers, including, but not limited to social security numbers, crew permit numbers, names and addresses, Federal fisheries permit numbers, Federal processor permit numbers, Federal tax identification numbers, and State of Alaska vessel registration and permit numbers, and by adding in their place a nonspecific identifier."

⁹ See Confidentiality Of Fisheries Information, Divisional Operating Procedure (DOP) CF-008, ADF&G Division of Commercial Fisheries. <https://www.admin.adfg.state.ak.us/confluence/display/CCFI/Confidentiality+DOP>., NAO 216-100 Protection of Confidential Fisheries Statistics. https://www.corporateservices.noaa.gov/ames/administrative_orders/chapter_216/216-100.html

Alternative 2, option 3, as specified in the Council’s April 2021 motion, considers adding regulatory language to change the “annual” frequency of each EDR information collection chosen under this alternative to specify collection frequency of 2 years, 3 years, or 5 years. Though the Council motion does not specifically identify that frequency could differ for each information collection the analysis of alternatives will consider that possibility.

2.3 Alternative 3

Alternative 3, Options 1-4, as specified in the Council’s April 2021 motion would consider complete removal of each individual EDR information collection and each can be considered individually as they are specified to not be mutually exclusive. Selection of the options under Alternative 3 would result in EDR language related to each EDR information collection being stricken from the associated regulations and FMPs.

2.4 Comparison of Alternatives

Each Alternative and option would potentially amend FMP text, regulatory text, EDR data collection forms, and operational procedures. Table 3 identifies what the action would accomplish and then identifies the FMP that would be amended, the regulations that would be amended, whether forms would need to be revised, and what operational procedures would be expected to change. As is shown in the table, Alternative 2, Option 1, removing audit authorizations, will require amendment to the Crab FMP, crab regulations (part 680), groundfish regulations (part 679), several forms, and would eliminate the audit process. Eliminating blind data formatting under Alternative 2, Option 2 also amends the Crab FMP, crab regulations, and groundfish regulations but does not affect EDR forms and retains respondent identifiers within the EDR data. Applying existing data handling standards under Alternative 2, Option 2 would only affect the Council’s guideline and its application in data aggregation but would not require either FMP or regulatory amendments. Changing the frequency of information collections under Alternative 2, Option 3 would require regulatory amendments. Eliminating EDR requirements under Alternative 3 would require regulatory amendments for both groundfish and crab, would eliminate forms, and would end the PSMFC data collection process for each EDR selected. FMP language generally authorizes a data collection program and would be retained.

Table 3 Comparison of the Alternatives

	Alternative 1	Alternative 2 Option 1	Alternative 2 Option 2	Alternative 2 Option 2	Alternative 2 Option 3	Alternative 3 Options 1-4
Action	Status quo. No action.	Remove independent third party audit authorizations	Eliminate blind formatting of EDR data	Apply existing data handling standards to EDR data	Change frequency of EDR collection	Remove EDR Requirements
Crab FMP		✓	✓		✓	✓
BSAI Groundfish FMP						✓
GOA Groundfish FMP						
Crab regulations (part 680)		✓	✓		✓	✓
Groundfish regulations (part 679)		✓	✓		✓	✓
Forms and instructions		✓			✓	✓
Operational procedures	Audits now only in cases of noncompliance	No audits, data verification continues/suspension of audit reports	DCA retains identifiers in EDR data provided to NMFS	Change in Council guidelines	Changes in reporting and analysis	End data collection/PRA process/PSMFC process

3. Description of the Economic Data Reporting Programs

3.1 Description of Potentially Affected Fisheries

While it is standard practice to provide information on fishery participation, harvest, revenue, and possibly community involvement, the purpose of inclusion of such information in an RIR is to create a baseline against which to compare the impacts and effect of the action alternatives under consideration. This analysis provides estimates of programmatic costs and industry compliance costs that would be either reduced or eliminated by adoption of the action alternatives. These cost savings are not comparable to standard baseline fisheries descriptions as they affect the financial operations of fishing companies but are not directly related to harvesting, processing, or communities. Thus, the analysts have omitted extensive fishery descriptions and have instead included extensive EDR program descriptions. For additional background information, this analysis incorporates by reference the Ten-Year Program Review for the Crab Rationalization Management Program in the Bering Sea/ Aleutian Islands (NPFMC 2017), and the Economic Status Report for Crab Fisheries of the Bering Sea/Aleutian Islands (Garber-Yonts and Lee, 2021) and the Economic Status Report for Groundfish Fisheries of the Gulf of Alaska and the Bering Sea/Aleutian Islands (NMFS 2021) as fishery descriptions.

3.2 Background: Current EDR Data Collections

The following subsections provide summary descriptions of each of the four current EDR data collections, including the initial year of implementation, target entity populations and conditions requiring submission of the associated EDR forms, and a summary description of the data elements collected in the respective forms. This is followed by a summary overview of EDR variables collected in the EDR Program as a whole.

Crab Rationalization Program EDR

The Council set forth the purpose and need for the Crab EDR in its June 2002 motion as follows:

“A mandatory data collection program shall be developed and implemented as part of the crab rationalization program and continued through the life of the program. Cost, revenue, ownership and employment data will be collected on a periodic basis (based on scientific requirements) to provide the information necessary to study the impacts of the crab rationalization program as well as collecting data that could be used to analyze the economic and social impacts of future FMP amendments on industry, regions, and localities. This data collection effort is also required to fulfill the Council problem statement requiring a crab rationalization program that would achieve “equity between the harvesting and processing sectors” and to monitor the “...economic stability for harvesters, processors and coastal communities. Both statutory and regulatory language shall be developed to ensure the confidentiality of these data.

Any mandatory data collection program shall include:

A comprehensive discussion of the enforcement of such a program, including enforcement actions that would be taken if inaccuracies in the data are found. The intent of this action would be to ensure that accurate data are collected without being overly burdensome on industry for unintended errors.”

The Crab EDR¹⁰ was implemented concurrent with the Crab Rationalization (CR) Program under Amendments 18 and 19 of the BSAI Crab FMP (70 FR 10174), effective April 1, 2005. The rule requiring EDR submission was codified in 50 CFR 680.6, which retroactively required affected entities to submit “historical” EDR forms for 1998, 2001, and 2004 calendar year operations by June 1, 2005, and to submit an annual EDR form for calendar year 2005 and thereafter by a deadline of May 1 of the following year. The Council took final action on Amendment 42 in December 2012, revising Crab EDR reporting requirements, and NMFS published the final rule (78 FR 36122), effective July 17, 2013. The amended rule extended the annual submission deadline to July 31. This section focuses on a description of the current Crab EDR data collection, with Section 4.3 below providing a more detailed discussion of the Council and NMFS process for developing and implementing the Crab EDR prior to 2013. However, as each of the revised EDR forms maintained a subset of the original data elements, the majority of data elements in the current Crab EDR have been collected continuously (with modifications where noted) since the baseline historical EDRs were submitted in 2005.

Under 680.6, the reporting requirements for the Crab EDR apply to a) owners and leaseholders of vessels and catcher/processors with landings of BSAI program crab (including Community Development Quota (CDQ) allocation crab), and b) owners and leaseholders of shore-based processing plants, and Registered Crab Receivers (RCRs), who purchase and/or process landed BSAI crab during a calendar year.¹¹ For both groups, the annual submission requirement is conditional on active participation in harvest, purchase, and/or processing (including providing custom processing) of CR crab.

Under the CR program, both harvest quota (Quota Share (QS)/Individual Fishing Quota (IFQ) and processing quota (Processor Quota Share (PQS)/Individual Processor Quota (IPQ) are held by qualified corporate entities or harvest cooperatives that are typically distinct from the entities that operate the crab vessels and from the processors that are subject to the EDR requirement. The Crab EDR is comprised of three EDR forms developed for the respective sectors: the Crab CV EDR, Crab Processor EDR, and the Crab C/P EDR.¹² The CV and processor forms collect distinct sets of data elements, with the CP form comprised of a combination of all data elements collected in the catcher vessel form and applicable elements from the processor form. Data elements collected in each of the Crab EDR forms are the following:

Crab CVs and CPs

- Estimated market value and replacement value of vessel;
- Crab landings volume (pounds) and ex-vessel revenue, by CR fishery and quota type;
- Annual total fuel cost and gallons;
- Fuel gallons consumed, by CR fishery;
- Provisions costs, by CR fishery;
- Bait costs, by CR fishery;
- Quota lease costs, by CR fishery and quota type
- Total labor payments to crew (total of final settlement payments), by CR fishery;
- Total labor payments to captains (total of final settlement payments), by CR fishery;
- Annual total direct labor payments to crew (inclusive of crab settlements);
- Health Insurance and Retirement Benefits provided to crew; (Y/N), by fishing crew/captains;

¹⁰ PSMFC’s Crab EDR webpage provides access to EDR forms, submitter instructions, and validation audit reports: http://www.psmfc.org/alaska_crab/.

¹¹ The EDR requirement for RCRs was added in the Amendment 42 EDR revision, beginning 2012 calendar year. Prior to 2012, RCRs that held crab IPQ and purchased landed crab for custom processing, and did not operate a plant, were not required to submit an annual EDR.

¹² The forms are formally labeled in 680.6(b) as the Annual Crab Catcher Vessel Crab EDR, Annual stationary floating crab processor and shoreside crab processor EDR, and the Annual catcher/processor crab EDR.

- Commercial crew license number or Alaska Commercial Fisheries Entry Commission (CFEC) gear operator permit number, by individual crew member that worked on vessel during CR crab season; and
- Vessel used for tendering during calendar year, (Y/N)

Crab processors, RCRs, and CPs

- Estimated market value and Borough assessed value (shore plants) or Replacement value (floating processors);
- Crab product sales to affiliated/unaffiliated buyers, volume (pounds) and first wholesale revenue, by crab species, product code, process code, and box size (large/small);
- Custom processing services provided, revenue, raw pounds, and finished pounds, by CR fishery, product code, and process code;
- Crab purchased from landing vessels, pounds and cost, by CR fishery and quota type;
- IPQ leased, pounds and cost, by CR fishery and quota type; and
- Custom processing services purchased, raw pounds, finished pounds, and processing fees paid, by CR fishery, product code, and process code;

Crab processors and RCRs

- Processing labor gross wages and paid hours, by CR fishery (CPs report processing crew labor cost combined with fishing crew);
- Processing employee count, by location of residence, CR Crab total and Annual total
- Non-processing employment (annual total number employed), and total annual gross wages and salaries

A80 EDR

The Council set forth the purpose and need for the A80 EDR in its June 10 2006 motion as follows:

“The purpose of the data collection program is to understand the economic effects of the Amendment 80 program on vessels or entities regulated by this action, and to inform future management actions. The data is needed to assess whether Amendment 80 addresses some goals in the problem statement to mitigate, to some degree, the costs associated with bycatch reduction. Data will be used by Council and agency staff, recognizing that confidentiality is of extreme importance.

Economic data collected under this program include employment data by vessel collected to determine the labor amounts and costs for the sector. In addition, revenue and cost data by vessel will be collected to evaluate trends in returns to the sector that may be compared with elements of the Amendment 80 program, such as bycatch reduction measures”

The A80 EDR¹³ was implemented in regulation at 50 CFR 679.94, as part of the Amendment 80 management program, published by NMFS on September 14, 2007 (72 FR 52668), effective January 20, 2008. The initial A80 EDR submissions were due June 1, 2009 reporting data for the 2008 calendar year. The A80 EDR reporting requirement under the original rule applied to all Amendment 80 Quota Share (QS) permit holders, with permit holders who actively operated an A80 vessel required to complete and

¹³ PSMFC’s Amendment 80 EDR webpage provides access to EDR forms, submitter instructions, and validation audit reports: <http://www.psmfc.org/am80edr/>.

the entire EDR form, and QS permit holders who did not operate a vessel required to complete portions of the form pertaining to QS permit sale and/or lease costs and revenues.

NMFS' publication of the rule implementing the GOA Trawl EDR program in 2014 included amendments to 679.94, redesignating the A80 EDR as the "Annual Trawl Catcher/Processor Economic Data Report" and added additional reporting elements to the form; the rule also extended the requirement to complete all portions of the EDR form to owners/leaseholders of any vessel named on a LLP groundfish license authorizing a C/P using trawl gear to harvest and process License Limitation Program (LLP) groundfish species in the GOA¹⁴. The association between the GOA Trawl (CV and Processor) EDR and Annual Trawl C/P EDRs has resulted in confusion. For the sake of clarity, the EDR currently specified under 50 CFR 679.94 is referenced in this RIR as the A80 EDR, and that under 679(a)(1) and (2) as the GOA Trawl EDR; any relevant distinctions and/or overlaps are described as needed.

The A80 EDR form has been submitted annually by A80 QS holders since 2008, consistently collecting comprehensive, quantitative data for the following data elements:

- Vessel characteristics and registry details (home port, tonnage, fuel capacity, shaft horsepower, year built);
- Survey value, date, and included assets;
- Fuel consumption rate (gal/hour), and annual total gallons consumed, by operating activity;
- Freezer storage and throughput capacity, and processing line throughput capacity, by A80 and GOA groundfish species and product code;
- Fishery product sales volume and revenue, LLP sale revenue, quota lease revenue and pounds, and other vessel operations income;
- Annual total capital expenditure, grouped by fishing gear, processing equipment, other equipment, and other vessel capital;
- Non-labor vessel operating expenses, annual totals grouped by: fuel; lubrication; provisions, repair and maintenance, vessel/equipment lease costs, fishing gear purchases, leases and repair costs; freight and storage costs for product sales; other freight and storage; materials; observer fees and reporting/monitoring costs; cooperative fees, general administrative/management overhead, vessel insurance; fisheries landing taxes, total cost and volume of raw fish purchases; and QS lease quantity and costs by A80 species;
- Gross labor costs, grouped by: deck crew, processing crew, and all other on-board crew
- Average number of crew onboard and total crew members employed in year, grouped by: deck crew, processing crew, and all other on-board crew; and
- Use of share-system for crew compensation (y/n), by processing/non-processing crew

Beginning in 2016, the revised Annual Trawl CP EDR added collection of individual commercial crew license or CFEC gear operator permit numbers for all individual crew members that worked on the vessel during the calendar year.

A91 Chinook Salmon EDR

The Council set forth the purpose and need for the A91 EDR in its December, 2009 motion as follows:

"In April 2009 the Council approved Amendment 91 to the BSAI groundfish fishery FMP to reduce Chinook salmon bycatch in the Bering Sea pollock fleet. Under Amendment 91, the pollock fishery has the option of participating in a NMFS-approved Incentive Plan Agreement (IPA) to access a higher hard cap than is available in the absence of an IPA. The IPAs provide a new and innovative method of bycatch management. A data

¹⁴ As a matter of public record, the addition of the EDR requirement to GOA Trawl CPs as defined in the 2014 rule effectively added the owner of one CP to the population of entities subject to the A80 EDR requirement.

collection program is needed in conjunction with Amendment 91 to understand the effects and impact of the IPAs. The data collection program will focus on: (1) evaluating the effectiveness of the IPA incentives in times of high and low levels of salmon bycatch abundance, the hard cap, and the performance standard in terms of reducing salmon bycatch, and (2) evaluating how the Council's action affects where, when, and how pollock fishing and salmon bycatch occur. The data collection program will also provide data for the agency to study and verify conclusions drawn by industry in the IPA annual reports. To ensure that a full assessment of the program is possible, the data collection program should be implemented at the time Amendment 91 is implemented or as soon as practicable.

To ensure that a full assessment of the program is possible from the start of the program, the data collection program should be separated into two phases, with a suite of data collection measures implemented at the time Amendment 91 goes into effect and sent to the Comprehensive Economic Data Collection Committee after IPAs have been fully developed and submitted to NMFS. The objective of this collection is to provide an improvement in the amount of data available to evaluate the effectiveness of incentives to minimize Chinook salmon bycatch under Amendment 91."

The A91 EDR¹⁵ and additional record keeping and reporting requirements associated with monitoring of Chinook salmon bycatch avoidance measures implemented concurrently, were published by NMFS on February 2, 2012 (77 FR 5389), effective March 5, 2012, approximately 17 months after rules implementing Amendment 91 (75 FR 53026) went into effect. The initial submission of EDR forms required under 50 CFR 679.65 were due on June 1, 2013 reporting data for the 2012 calendar year.

The A91 EDR reporting requirement applies most broadly to owners and leaseholders of AFA-permitted catcher vessels, catcher-processors, and motherships active in the Bering Sea pollock fishery, and to entities eligible to receive Chinook salmon Prohibited Species Catch (PSC) allocation (apart from AFA vessel owners, this includes AFA In-shore Sector harvest cooperative representatives, sector-based Incentive Plan Agreement representatives, and Community Development Quota Program group representatives), all of whom are annually noticed of EDR submission requirements by the Pacific States Marine Fisheries Commission (PSMFC). In addition, captains of AFA vessels who were active in the A or B season of the previous year pollock fishery are the target population of one of the three A91 EDR forms, but are assigned by vessel owners and not directly required to submit EDR forms to NMFS.

The A91 EDR is comprised of three separate forms: the Compensated Transfer Report, the Vessel Fuel Survey, and the Vessel Master Survey. The Compensated Transfer Report (CTR) is intended to collect transaction-level data on all bipartite transfers of Chinook PSQ allocation units during the pollock season in which monetary payment is included the transaction (i.e., "in-kind only" transactions are exempted). For each individual PSC transfer, the submitter is required to report: the NMFS id of the other party, the type of association between the submitter and the other party, the entity type of the other party, the number of Chinook salmon PSC transferred, the payment in \$US transferred, and a Y/N indicator that other assets besides Chinook PSC were included in the transfer. It was the NPFMC's intention that the CTR would capture "spot-market" PSC transfers, exempting pre-season or other transfers in which salmon PSC and pollock quota are coupled and avoiding revelation of pollock quota lease value. The form is to be completed by all entities participating as lessor or lessee in one or more "compensated transfers" of Chinook PSC; however, no such transactions have been reported, and all CTR form submissions to date have been "certification-only" submissions.

¹⁵ PSMFC's A91 Chinook Salmon EDR webpage provides access to EDR forms, submitter instructions, and validation audit reports: <http://www.psmfc.org/chinookedr/>.

The Vessel fuel survey is required for all AFA vessels that harvested BSAI pollock during the previous year, and collects four data elements:

- Average hourly rate of fuel consumption for the vessel while operating in the BSAI pollock fishery, reported separately for fishing and transiting; and
- Total annual amount (in gallons) of fuel loaded to the vessel during the year, and total fuel cost.

The vessel master survey is comprised of a series of qualitative response questions regarding fishing and bycatch conditions observed by vessel masters during the BSAI pollock fishery and factors in effect that motivated Chinook bycatch avoidance (survey questions are listed below).

- If the vessel participated in an Incentive Plan Agreement, did the IPA affect your fishing strategy? If yes, please describe and discuss what incentives had the largest impact on your strategy.
- Did the amount and/or cost of Chinook PSC allocation available to the vessel lead you to make changes in pollock fishing operations? If yes, please describe.
- How would you compare the Chinook salmon bycatch and pollock conditions during the A and B seasons this year relative to the last two years? Please describe any unique aspects of the season.
- Did Chinook salmon bycatch conditions cause you to delay the start of your pollock fishing or otherwise alter the timing of your pollock fishing for some period during the past A and/or B season? If yes, please describe the Chinook salmon bycatch condition, when it occurred, and any change in your pollock fishing as a result.
- In the past year, did you end a trip and return to port early because of Chinook salmon bycatch conditions? [] YES [] NO. If YES, please indicate the number of trips that this occurred in each season (use a checkmark to indicate appropriate answer for each season).
- Please describe how any area closures or restrictions for the purpose of reducing Chinook salmon bycatch affected where and how you fished.
- Please describe how any regulatory or other area closures or restrictions for a purpose other than reducing Chinook salmon bycatch affected where and how you fished.
- Compared to a typical year, did weather or sea ice conditions have more, less or about the same impact on fishing as in a typical year? Please describe especially if there were particularly uncommon conditions at any point this year. If these conditions had an impact on your ability to avoid Chinook salmon bycatch, please describe.
- Were there exceptional factors that affected your pollock fishing this year? For example, were there unusual market or stock conditions, unusual pollock fishing conditions, or maintenance problems? Please describe.
- Separate from an Incentive Plan Agreement, were there other incentives for you to reduce Chinook salmon bycatch? If yes, please describe.
- Did actual or potential bycatch of species other than Chinook salmon cause you to change your harvesting decisions during the pollock season? If yes, please describe.

The structure of the A91 EDR is distinct from the other three EDRs in that its three forms are submitted separately, with AFA vessel owners as the primary submitter group, from which all three of the forms are required. The CTR form is also required from PSC entities, for whom it is the only EDR requirement. Vessel owners are also required to submit the fuel survey form, and to collect and submit vessel master surveys completed by the captain(s) of the vessel designated by the owner.¹⁶ All three forms include

¹⁶ 679.65(d) states: “Vessel Master Survey. (1) For any AFA -permitted vessel used to harvest pollock in the Bering Sea in the previous year: (i) The vessel master must complete the Vessel Master Survey, and the Vessel Master certification following the instructions on the form. (ii) An owner or leaseholder must complete the Vessel owner certification following instructions on the form. (iii) An owner or leaseholder must submit all Vessel Master

certification sections, which include conditions under which the submitter is exempted from the data reporting portion of the form, and is required only to submit the certification section of the form if such exemptions apply. The requirement to complete the data portion of the CTR form is conditional on participation in a “compensated transfer” as defined in the form, and for the vessel master and fuel survey forms, is conditional on the vessel being active in harvesting BSAI pollock during the reporting year. In addition, the implementing rule for the A91 EDR specified that all forms be electronically submitted online. This required development by PSMFC of a more complicated web application interface to facilitate vessel owners’ assignment of vessel master surveys while ensuring security of confidential data between linked users accounts.

Gulf of Alaska Trawl EDR

The Council set forth the purpose and need for the GOA Trawl EDR in its February 2013 motion as follows:

“The Council is interested in developing a data collection program that can be established prior to the implementation of a trawl catch share program in the GOA. This fast-tracked data collection would provide the Council and analysts with relevant baseline information that can be used to assess the impacts of a catch share program on affected harvesters, processors, and communities in the GOA.

In developing a data collection program that can be implemented quickly, efficiently, and with minimal burden on participating stakeholders, the Council intends to prioritize the collection of information that is relevant, reliable, and for which existing data sources do not exist. Given the potential for implementation of catch shares in both the Central and Western GOA, the scope of the analysis should include participants in both management areas.”

The final rule implementing the GOA Trawl EDR¹⁷ was published December 2, 2014 (79 FR 71313), effective January 1, 2015, and establishing an initial submission due date of June 1, 2016 for EDRs reporting 2015 calendar year data. As noted previously, the EDR was intended by the Council to be implemented in advance of a catch-share program for the GOA that was in-development at the time of its 2013 motion. However, Council action on GOA bycatch management was suspended in December 2016.

The target population for the GOA Trawl EDR includes owners and leaseholders of catcher vessels and catcher/processors active in the Central and Western GOA groundfish trawl fishery, and operators of shoreside processing facilities that receive groundfish catch from the GOA. The EDR is comprised of three EDR forms: in addition to the Annual Trawl CP EDR described in Section 4.2.3.2 above, the Annual Trawl Catcher Vessel EDR, Annual Shoreside Processor EDR, and Annual Trawl CP EDR forms.

The Trawl CV EDR form is required for all trawl CVs that harvested groundfish in the GOA during the previous year. The form collects the following data elements:

- Estimated market value and replacement value of vessel;
- Fishing gear costs – total direct capitalized expenditures and fully expensed costs for purchase, lease, installation and repair of a) salmon and halibut excluder gear, and b) trawl gear (including excluder gear other than salmon and halibut);

Surveys, and each Vessel owner certification electronically on or before ...” However, no regulatory definition of “vessel master” is applicable to AFA vessels.

¹⁷ PSMFC’s GOA Trawl EDR webpage provides access to EDR forms, submitter instructions, and validation audit reports: <http://www.psmfc.org/goatrawl/>.

- Annual total fuel and lubrication cost and gallons;
- Total labor payments to a) crew and b) captain (total of final settlement payments), and number of crew, GOA groundfish only;
- Commercial crew license number or CFEC gear operator permit number, by individual crew member that worked on vessel during GOA groundfish trawl fishing.

The Annual Shoreside Processor EDR form is required from all shore-based processors that receive and process groundfish from GOA trawl fisheries. The forms collect the following data elements:

- Estimated market value; Borough assessed value or Replacement value;
- Municipal water utility consumption, gallons and cost, by month, Kodiak plants only;
- Municipal electrical utility consumption, kilowatt-hours and cost, by month, Kodiak plants only;
- Processing labor gross wages and hours, by month and housing-status (housed, non-housed), groundfish processing only;
- Number of processing employees, by month, groundfish only;
- Non-processing employment, number employed, total wages and salaries, annual total.

Summary Overview of EDR Variables by EDR Form

Table 4 below provides a comparative overview of all data elements collected in the EDR program as a whole (with the exception of the A91 Vessel Master Survey). The first column groups together data element collected in one or multiple EDR forms by category: vessel/plant characteristics; revenue, capital expenditures, non-labor operating costs; employment and labor costs; and other operational data, with individual data elements broken out to show the comparison the scope of elements collected in the respective EDR forms. The description of data elements by EDR form shown in column 2-9 indicate the particular specification of the data element in the respective form, including stratification/aggregation (by fishery, annual), scope or reporting (annual, groundfish only), and other variations between EDR forms.

Table 4 Comparative overview of EDR variables across EDR forms

EDR Variables, by general group	BSAI crab			GOA trawl / A 80			A91	
	Catcher vessel	Catcher Processor	Shoreside & floating processor	Catcher vessel	Catcher processor	Shoreside & floating processor	Vessel Fuel Survey	Compensated Transfer Report
Vessel / plant characteristics								
Name of Cooperative	Annual	Annual			Annual			
General vessel characteristics (1)					Annual			
Value of Vessel (Plant) and equipment Note: Assessed value reported for Shoreside processors only; Replacement value reported for CVs and floating processors only	Estimated market value; replacement value	Estimated market value; replacement value	Estimated market value; Borough assessed value or Replacement value	Estimated market value; replacement value	Survey value (survey date and inclusions)	Estimated market value; Borough assessed value or Replacement value		
Fuel consumption rate, average (gal/hour)					By activity (fishing/processing; steaming loaded; steaming empty); Annual		By activity (fishing; transiting); Pollock fishery	
Freezer capacity - storage capacity (pounds) and maximum product throughput (pounds per hour)					Annual			
Processing capacity - number of processing lines and maximum throughput (pounds per hour)					By species and product; A80 and GOA Groundfish			

EDR Variables, by general group	BSAI crab			GOA trawl / A 80			A91	
	Catcher vessel	Catcher Processor	Shoreside & floating processor	Catcher vessel	Catcher processor	Shoreside & floating processor	Vessel Fuel Survey	Compensated Transfer Report
Revenue								
Ex-vessel	Revenue and pounds, by CR fishery and quota type							
1st Wholesale		Revenue and pounds, by affiliated (y/n), crab species, product, process, and box size	Revenue and pounds, by affiliated (y/n), crab species, product, process, and box size		Revenue and pounds (includes custom processing); Annual			
Custom processing provided		Revenue, raw pounds, and finished pounds, by CR fishery, product, and process	Revenue, raw pounds, and finished pounds, by CR fishery, product, and process					
Other vessel operation income					Revenue; Annual			
LLP sale revenue					By LLP sold			
Quota royalty revenue					Shares (mt) and royalty revenue; by A80 quota species			
Capital expenditures								
Fishing gear(3)				Capitalized plus expensed value; by type (halibut/salmon excluder), Trawl gear	Annual			
Processing equipment					Annual			
Other equipment					Annual			
Other capital expenditures					Annual			
LLP purchase cost					Annual			

EDR Variables, by general group	BSAI crab			GOA trawl / A 80			A91	
	Catcher vessel	Catcher Processor	Shoreside & floating processor	Catcher vessel	Catcher processor	Shoreside & floating processor	Vessel Fuel Survey	Compensated Transfer Report
Operating costs, non-labor (annual expenses)								
Fuel and lubrication	1) Fuel cost and gallons; Annual 2) Fuel gallons, by CR Fishery	1) Fuel cost and gallons; Annual 2) Fuel gallons, by CR Fishery		Fuel and lubrication cost and fuel gallons; Annual	1) Fuel cost, lubrication cost; Annual 2) Fuel gallons, by activity (fishing/processing; steaming loaded; steaming empty); Annual		Fuel cost and gallons; Annual	
Food and provisions	By CR fishery	By CR fishery			Annual			
Bait cost	By CR fishery	By CR fishery						
Vessel and equipment - repair and maintenance costs					Annual			
Vessel and equipment - lease costs					Annual			
Fishing gear - purchases, lease, repair costs (excluding finance costs)					Annual			
Freight, storage, other sales costs for non-FOB sales					Annual			
Freight and storage other than for products					Annual			
Product and packaging materials					Annual			
Observer / monitoring fees					Annual			
Cooperative fees					Annual			
General Administrative Cost					Annual			
Insurance					Annual			
Fisheries landing taxes					Annual			
Raw fish purchases from other vessels, quantity and cost		By CR fishery and quota type	By CR fishery and quota type		Annual			
QS/PQS lease amounts and cost	By CR fishery and quota type	By CR fishery and quota type	By CR fishery and quota type		By A80 quota species			Chinook PSC; by compensated transfer
Custom processing purchased - quantity and revenue		By CR fishery, product, process	By CR fishery, product, process					

EDR Variables, by general group	BSAI crab			GOA trawl / A 80			A91	
	Catcher vessel	Catcher Processor	Shoreside & floating processor	Catcher vessel	Catcher processor	Shoreside & floating processor	Vessel Fuel Survey	Compensated Transfer Report
Utilities (municipal) - water quantity and cost						Gallons and cost, by month; Kodiak plants only		
Utilities (municipal) - electricity quantity and cost						kWh and cost, by month; Kodiak plants only		
Labor cost and employment								
Labor cost - harvesting (4)	Final settlement paid, total by crew-type (fishing crew; captains) and CR fishery	Final settlement paid, total by crew-type (fishing/processing crew; captains) and CR fishery		Final settlement paid, total by crew-type (fishing crew, captains); GOA trawl	Gross wages, total by crew-type (deck crew; other non-processing crew); Annual			
Labor cost - processing (5)		Combined with harvesting labor cost	Gross wages and hours; by CR fishery		Gross wages; Annual	Gross wages and hours, by month and housing-status (housed, non-housed); Groundfish only		
Labor cost - Other personnel(6)			Total wages and salaries, non-processing personnel; Annual			Total wages and salaries, non-processing personnel; Annual		
Labor cost - total vessel labor	Total direct payment to crew (inclusive of settlements); Annual	Total direct payment to crew (inclusive of settlements); Annual						
Labor cost - non-wage expenses	Benefits provided (Y/N), by crew-type (fishing crew; captains); CR Crab	Benefits provided (Y/N), by crew-type (fishing crew; captains); CR Crab			Total benefits, recruitment, travel, and non-wage employment costs; Annual			
Employment - harvesting				Count of paid crew (excluding captains); GOA trawl	Employee count and average positions, by crew-type (deck crew; other non-processing crew); Annual			
Employment - processing			Employee count, by location of residence; CR		Employee count, average positions, and average hours per employee-day; Annual	Employee count, by month; Groundfish fisheries		

EDR Variables, by general group	BSAI crab			GOA trawl / A 80			A91	
	Catcher vessel	Catcher Processor	Shoreside & floating processor	Catcher vessel	Catcher processor	Shoreside & floating processor	Vessel Fuel Survey	Compensated Transfer Report
			Crab and Annual					
Employment - other non-processing			Employee count; Annual			Employee count; Annual		
Employment - Crew licenses and permits	License/permit number, by crew member; CR Crab	License/permit number, by crew member; CR Crab		License/permit number, by crew member; GOA groundfish	License/permit number, by crew member; Annual			
Crew share system in use					Y/N, by some/all, processing/non-processing; Annual			
Other operational data								
Active days - fishing/processing					By activity (fishing; processing) and fishery (A80, GOA groundfish, other)			
Inactive days					Annual			
Travel/offload days					Annual			
Did vessel perform tendering?	Y/N; Annual							

Notes:

- 1: Home port, gross/net tonnage, length overall, beam, shaft horsepower, fuel capacity, year built
- 2: BSAI crab CV + CP + GOA trawl CV: estimated market value and replacement value; GOA trawl CP: survey value; BSAI crab shoreside processor + GOA trawl shoreside processor: borough assessed value, current estimated value; BSAI crab floating processor + GOA trawl floating processor: current estimated market value, current estimated replacement value
- 3: GOA trawl CV: separate reporting of excluder gear and trawl gear costs, includes total direct expenditures for lease, purchase, installation, and repair of gear; excludes finance costs; GOA trawl CP: separate reporting of fishing gear capital expenditures and fishing gear leases, repairs, and purchases fully expensed in calendar year
- 4: BSAI crab CV + CP + GOA trawl CV: reporting of labor payments to harvest crew and captain excludes non-wage expenses such as payroll taxes, unemployment insurance, and worker's compensation; GOA trawl CP: reporting of deck crew labor expenses lumps together captain and other harvesting crew reporting, and includes bonuses and payroll taxes but excludes benefits and insurance
- 5: GOA trawl CP: includes bonuses and payroll taxes but excludes benefits and insurance
- 6: BSAI + GOA trawl shoreside/floating processor: reporting of labor payments excludes non-wage expenses such as payroll taxes, unemployment insurance, and worker's compensation; GOA trawl CP: reporting of labor expenses for other employees includes bonuses and payroll taxes but excludes benefits and insurance.

An examination of Table 4 indicates a number of inconsistencies, at different scales, across EDR forms. The most obvious disparity is between the relative comprehensiveness of the content reported in the A80 EDR form compared to the scope of data collected in other EDR forms.

The A80 EDR collects measures of the physical capital stock of the vessel, and collects revenue and costs using a framework that has been tested for consistency with financial and other record systems in use by vessel owners. Revenue is collected for four primary income streams generated by the vessel and associated assets, each of which is reported as a simple annual aggregate value rather than disaggregated by fishery or bounded to one fishery or period during the year. Capital expenditures are collected for four major categories that collectively represent the physical and intangible assets comprising the productive capital of the vessel, and annual expenses are broken out into a reasonably complete set of accounting categories that likely correspond readily to information that vessel owners maintain as a matter of standard business tax and financial accounts. Labor costs and employment are broken out into coherent labor classes.

In contrast to the A80 form, no other EDRs collect general capital investment expenditures. The crab CP EDR form collects four categories of non-labor operating costs compared to 14 in the A80 CP form, but requires stratification by individual crab fishery. The Crab CV form collects fuel, provisions, and bait by crab fishery, whereas the GOA CV form collects annual fuel expenditures.

At a finer scale, there are additional inconsistencies across EDR forms in the specification of individual data items, as in the GOA CV reporting of trawl gear and excluder devices combines capitalized expenditures (paid over multiple years) with annual expenses, compared to separate treatment of fishing gear capitalized and expense costs in the Trawl CP form. Also notably, the GOA CV form includes three alternate scales of reporting: values aggregated to total annual value, GOA trawl value, and GOA groundfish value.

Applications of EDR Data

Despite numerous limitations, the EDRs together provide considerable valuable insights into the economic behavior of the fishing industry. While there have been a number of specific valuable applications, the EDRs have also given analysts who use the data a deeper understanding of the diversity within and across fleets. For example, from the A91 Vessel Master Survey, it is clear that the pollock fishery is balancing a complex range of management challenges. Having a census of all captains reveals that different fishers have very different experiences in any given year. Features such as the extent of sea ice varies considerably and impact fishing choices and the difficulty of avoiding Chinook salmon bycatch. All of the EDRs provide insight into the differences across the vessels in the fleets they represent. This illustrates that some vessels may be much more flexible at moving in response to changing target and bycatch encounter rates. This section describes some of the analyses that have been completed, are in development, and/or are continuing to be conducted using EDR data.

The Multi Region Social Accounting Matrix Model for Alaska Fisheries (MRSAMM)

Description of Model

The Leontief input-output (IO) model (Miller and Blair 1985) has been extensively used for economic impact analysis. The model is able to capture the inter-industry linkages through taking into account the transactions of intermediate inputs among the industries in calculating the economic impacts of a change in final demand, hence it is called a “demand-driven” model. However, one weakness of the IO model is that it cannot account for the effects of income flowing from industry sectors to value-added sectors (labor and capital), and then on to institutional sectors (households and various levels of governments).

A SAM model is an extension of the IO model, and overcomes the weakness of the IO model by capturing these flows in detail. Therefore, with the SAM model it is possible to investigate the distributional effects of a policy on non-industry sectors such as value-added sectors and institutions. More detailed descriptions of SAM models are found in King (1985) and Holland and Wyeth (1993), among others. Most SAM models are single region (a nation or a sub-national region) models. With a single-region model, it is difficult to examine effects transmitted across regions (spillover effects and feedback effects). The multiregional 10MRSAM model used for this study was developed to enable investigation of inter-regional effects with respect to Alaska fisheries.

Alaska fisheries are very complex in several respects. First, fish caught in a fishing area (e.g., BSAI or GOA) are landed at a number of different ports in Alaska which are located in different Borough and Census Areas (BCAs). Second, a large portion of the primary factors of production (labor and capital) is owned by non-Alaska residents. This means that a large proportion of value-added generated in Alaska seafood industries exits the state. Third, a significant portion of the intermediate inputs used in Alaska fisheries is imported from outside Alaska.

In modeling the regional economic impacts of Alaska fisheries, a single-region model is unable to capture interregional commodity and factor flows or to quantify the geographical distribution of economic impacts resulting from a fishery management action. Addressing the complexity of Alaska fisheries necessitates using a multi-regional model such as the 10MRSAM model that identifies different fishing-dependent BCAs separately and includes their economic linkages to other regions.

Initial work by Waters et al (2014) represents a three-region version of the multi-region social accounting matrix model. This model was further developed and presented to the Council's Scientific and Statistical Committee (SSC) in February of 2020. At that time, considerable work had been completed on developing a ten regional MRSAMM. A web-based user application was also developed along with a Technical Memorandum documenting the model and application tool (Seung and Miller, 2018).

The SSC was supportive of the MRSAMM efforts and requested an opportunity to review the finalized ten-region model prior to it being used in Council actions. The SSC was tentatively scheduled to review the ten-region model in February of 2022; however, time limitations have prevented that review. Also under development is a new web-based application for the ten region model and this work is nearly complete at this time.

Regional Economic Impact models are highly data intensive and technically challenging to construct and update. The new ten-region MRSAMM specifications and mathematics are presently being documented in a NOAA Technical Memorandum that is in process. For context, the abstract of that draft technical memorandum is provided below:

Most traditional regional economic models developed for North Pacific fisheries depict either the whole state (i.e., Alaska) or a large sub-region (e.g., the Southeast region). While these models are well suited to calculate impacts of fishery management actions on those relatively large regions, they may not as accurately represent impacts on smaller "fishing communities", or fishing-dependent areas such as individual boroughs and census areas (BCAs). Therefore, results from traditional models may be less useful for fishery managers, policy makers and other entities interested in examining impacts on specific communities, especially ones with very unique, fishing-dependent economic structures. No existing study has yet developed models designed to estimate impacts on individual fishing-dependent communities in Alaska.

Recently, Alaska Fisheries Science Center (AFSC) collected regional economic information (including employment and expenditures) for six BCAs in the Southwest Alaska (SWAK) region from surveys of fish harvesting vessel owners and interviews with key informants, including seafood processors and local

input supply businesses. In a follow-up project, AFSC constructed a multi-regional social accounting matrix (MRSAM) incorporating the data mentioned above and other supplementary information. This MRSAM will serve as the baseline dataset from which regional economic models for SWAK fisheries will be developed. This report describes the data and procedures used to construct the MRSAM and provides guidelines for those interested in building similar datasets for fishing-dependent communities in Alaska, other U.S. regions, or other countries.

EDR Data Used in the Model

In developing MRSAMM (i.e., 10 MRSAM model), the Crab EDR and A80 EDR data was used extensively. The A91 EDR and GOA Trawl EDRs were not used in the model development process.

When developing MRSAMM, the Crab EDR and A80 EDR were very helpful and saved much time by providing information on relevant vessel and processor costs. If there were no EDR data available, construction of a model such as MRSAMM would have to rely 100% on data from voluntary surveys. Relying on voluntary data means lower data accuracy (due to relatively small number of responses) and substantially increased amount of time needed to collect and process survey data. In sum, availability of EDR data for as many fisheries / species as possible will significantly enhance the ability to develop reliable regional economic models such as MRSAMM and greatly reduce the time and expense required to develop them.

Implications of Loss of EDR Data for the MRSAMM Research Program.

Elimination of the EDRs would significantly slow the AFSC economics research program because as mentioned above, it means the analysts must rely 100% on voluntary survey data collection with consequent weaknesses of low data accuracy and significant increases in the amount of time and expense required. Even with EDRs for Crab and A80 fisheries that were used to construct the MRSAMM it took a substantial amount of time to process and integrate data for developing the models. Updating the MRSAMM in the future will also take non-trivial effort, time and expense. If EDR data were not available, developing and updating regional economic models would be a considerably more difficult, time-consuming and expensive task, with likely negative consequences regarding meeting National Standard 8 analytical requirements in a timely and efficient manner for decision making.

Example of MRSAMM Output

The Amendment 80 Program Review (Northern Economics, 2014) used a regional economic impact analysis model developed by Waters et.al. to evaluate the regional economic impacts that the Amendment 80 fisheries have on Alaska, the west coast of the U.S, and the rest of the U.S

This summary of findings is excerpted from the five-year Amendment 80 program review:

The report estimates that in 2008 the total economic contribution of the AM80 sector's \$281 million of first wholesale revenues (estimated from 2008 COAR data) was approximately \$1 billion in total output, which contributed \$571 million in total value added, \$289 million in total labor income, \$351 million in total household income, \$79 million in total state and local government revenue, and 6,800 total jobs in the combined economies of the three regions. About 80 percent of the \$351 million total household income generated by AM80 sector activities accrued to households outside Alaska (including payments to non-Alaska residents in the AM80 sector workforce). Also, about 71 percent of the \$79 million in total state and local government revenues were paid to governments outside Alaska.

The ten-region MRSAMM has been used to develop a research paper titled Community-level Economic Impacts of a Change in TAC for Alaska Fisheries: A Multi-regional Framework Assessment (Seung, Waters, and Barbeaux, 2022). For context, the abstract of that work is as follows:

A marine heatwave caused the total biomass of Gulf of Alaska (GOA) Pacific cod to plummet by 67% from 2015 to 2018. Based on the results from GOA Pacific cod stock assessment model, the North Pacific Fishery Management Council cut the GOA Pacific cod total allowable catch (TAC) by 80% in 2018. This study uses a 10-region multi-regional social accounting matrix model to compute the economic impacts of the cod fishery disaster on the six borough and census areas (BCAs) in Southwest Alaska plus effects on the other four regions. We consider both the negative effects of the reduction in the cod harvest and the offsetting effects from an observed increase in the price of the fish to calculate the “net” economic impacts. This study found that the offsetting effects from the price increase are significant; the reduction in total regional output in the rest of the United States is 15% less severe if effects of the price changes are taken into account. Furthermore, the region suffering the largest impacts on total seafood industry output (Aleutians East Borough) from the reduced TAC is not necessarily the region where the largest total regional impact occurs (rest of the U.S.).

A80 Annual Reporting

To assess the performance of the A80 program and subsequent changes in fishery management, economists and analysts at the AFSC use the A80 EDR data collection to prepare an annual summary that is included as a chapter to the annual publication the Economic Status of the Groundfish Fisheries off Alaska. The summary reports statistics that indicate trends in a variety of economic indicators and metrics. The reported statistics provide an overview of fishery performance over time. The statistics are not intended as a rigorous statistical analysis of specific hypotheses regarding economic efficiency or other performance metrics. These statistics generally include changes in the physical characteristics of the participating vessels, including productive capacity of vessel (freezer and processing line capacity and maximum potential throughput) and fuel consumption rates, efficiency and diversification of processing output, investment in vessel capital improvements, operational costs incurred for fishing and processing in the A80 fisheries and elsewhere, and employment and compensation of vessel crews and processing employees.

Crab EDR Annual Reporting

AFSC economists and analysts also prepare an annual summary of the Crab EDR data. The crab annual summary is prepared as the Economic Status of the BSAI King and Tanner Crab Fisheries off Alaska (Garber-Yonts and Lee, 2021). This report presents information on economic activity in commercial crab fisheries currently managed under the Federal FMP for Bering Sea and Aleutian Islands King and Tanner Crab (with attention to the subset of fisheries included in the Crab Rationalization Program). Statistics on harvesting and processing activity; effort; revenue; labor employment and compensation; operational costs; and quota ownership, usage and disposition among participants in the fisheries are provided. Additionally, this report provides a summary of BSAI crab-related research being undertaken by the Economic and Social Sciences Research Program (ESSRP) at the AFSC.

At this time, there is no annual reporting associated with the A91 nor GOA Trawl EDRs.

Council Program Reviews

The MSA requires a formal and detailed review of Limited Access Privilege Programs (LAPP) 5 years after the implementation of the program, and thereafter to coincide with scheduled Council review of the relevant fishery management plan (but no less frequently than once every 7 years). This requirement applies to the AFA Program, The Crab Rationalization Program, and the Amendment 80 Program; however, it does not apply to the GOA Trawl fleet because that fleet is not presently managed under a LAPP structure. The AFA program review was last completed in 2017 (Northern Economics 2017) and did not directly use A91 EDR data, as the A91 EDR is focused on bycatch monitoring and management. The AFA program review does discuss the requirements of the A91 EDR and includes cost recovery information for the A91 EDR.

The Crab Rationalization Program has had three-year, five-year and 10-year program reviews prepared thus far. Both the 5-year and 10-year crab program reviews relied on EDR data to document fleet performance with regard to quota usage and leasing, effort levels, vessel operating costs, gross and net earnings, crew participation and crew earnings. This information is also used to document changes in crew employment and compensation and state of residency of crew. Processing labor, employment, and wages are also assessed using EDR data.

The 10-year crab program review also contained a Social Impact Assessment (SIA) as an appendix to the review. The SIA utilizes EDR data along with other data sources to provide, within the bounds of data confidentiality constraints, a quantitative participation description by community in the crab program. The SIA includes harvest trends by crab fishery, local community fleet participation, catcher vessel crab harvest volume and value by community, community processor participation, processor volume and value by community by share type, and quota share distribution by community for Alaska, Washington, Oregon, and other U.S. states combined. The 10-year Crab Rationalization Program review also used Crab EDR data to summarize the social impacts of crab rationalization by community, including discussions of vessel participation, catcher vessel owner shareholdings, crew participation, catcher vessel crew shareholdings, locally operating processors, support services, and local governance and revenues. The Crab Rationalization Program is presently scheduled for its next review in 2023 (see <https://www.npfmc.org/3meeting/>)

In 2017, a program review was conducted for the Central GOA Rockfish Program. This program review also included a SIA that made extensive use of GOA Trawl CV EDR data by developing cross-walk tables for catcher vessel ownership address by community and community of residence of crew on those vessels, along with payments to labor information. These tables provided a view of the “employment footprint of the fishery” in a way that could not be done without EDR data. EDR data were used in the SIA to illuminate shore-based processing labor hours and payments to labor by processing crew members housed and not housed by their employer. The SIA also made use of the EDR data on types of crew positions and payments to labor for relevant catcher/processor entities.

The Amendment 80 program 5-year review was completed in 2014 (Northern Economics, 2014). The review relies heavily on A80 EDR data. The review provides an overview of the EDR data collected and uses the data to summarize expenses and net revenues fleet wide. Operating expenses, including payments to labor, are also documented. The EDR data is also used to develop a cash flow model. The Amendment 80 Program is presently scheduled for its next review in 2022. (see <https://www.npfmc.org/3meeting/>).

Use of EDR Data in Analyses

Council staff, NMFS staff, contractors, and academic partners have used EDR data, both from published reports and custom queries, in several important ways. As mentioned above, EDR data have been used extensively in catch share program reviews. In addition, it has been used in several regulatory action analyses, such as for analyzing crew employment in the 2014 Final Environmental Impact Statement: Steller Sea Lion Protection Measures for Groundfish Fisheries in the Bering Sea and Aleutian Islands Management Area. EDR data was also used in analyses of regulatory actions affecting the Amendment 80 fleet and was used in a regulatory impact review of allowing deck sorting of halibut in non-pollock groundfish trawl fisheries (NMFS, 2019).

Several recent Council action analyses have used EDR data. The 2016 GOA trawl bycatch management analysis included an SIA that made extensive use of GOA Trawl EDR data. GOA Trawl EDR data was also used in the recently completed (3/8/19) analysis titled BSAI Final Review Draft Social Impact Assessment: Catcher/Processor Mothership Restrictions in the Bering Sea and Aleutian Islands and the Gulf of Alaska when taking Directed Non-CDQ Pacific Cod Deliveries from Trawl Catcher Vessels. However, in this case, complete data was not available for any of the different sectors involved and no

EDR data was available for some of the sectors involved. This action was a reallocation between sectors and it would not be acceptable to present detailed data on one sector and not another. To overcome this limitation, the analysts used the GOA EDR's crew residence data for catcher vessels that worked both in the GOA and the BSAI, with caveats, as a work around solution.

Council staff have also used EDR data in discussion papers and analyses related to the crab fisheries, including an analysis of Crab Prohibited Species Catch Limits in the BSAI Groundfish Trawl Fisheries (NPFMC 2021). This analysis was presented to the Council, for initial review, in February of 2021. Council staff also expect crab EDR data may also be useful in evaluating the impacts of the BBRKC fishery closure and for monitoring how the fleet recovers as the fishery rebounds. Similarly, Crab EDR data can be used in the future to evaluate impacts of snow crab rebuilding.

EDR data have also been used in projects related to groundfish and crab stock assessments. Cost and production data from crab EDRs were used to parameterize bioeconomic models to evaluate effects of uncertainty buffers for catch projections (Punt et al. 2012). Additionally crab EDR cost and production data were used to parameterize cost and production functions in bioeconomic models to evaluate long-term effects of ocean acidification on Bristol Bay red king crab (Punt et al. 2014, Seung et al. 2015), and Eastern Bering Sea Tanner crab (Punt et al. 2016). In addition, cost and production data from crab EDRs will be used to parameterize cost and production functions in the joint snow-Tanner crab bioeconomic model under development.

EDR data have also been used in several journal articles and/or technical memos that evaluate fishery productivity and efficiency changes (Walden et. al. 2014, Fissel et. al. 2015, Thunberg et. al. 2015), and in an analysis measuring the multiregional economic contribution of an Alaska fishing fleet with linkages to international markets (Waters et al., 2014). EDR data was used in an evaluation of economic impacts of marine reserves Reimer and Haynie, 2018) and to calibrate a model that was used to explore the sources of rents generated from ITQs (Reimer et al. 2014). Further, the Amendment 80 EDR data are currently being used in an NPRB Project with Principal Investigators Matthew Reimer, Joshua Abbott, and Alan Haynie. Amendment 91 Chinook salmon EDR data are being used in several manuscripts that are currently in peer review.

In addition to the use of EDR data in the analyses identified above, several data evaluation reports have been developed. These include the following:

- Bering Sea/Aleutian Island Crab Economic Data Report Center for Independent Experts Review August, 2011
(https://www.afsc.noaa.gov/REFM/Socioeconomics/PDFs/CIE%20review%20reports/2011_11%20Anderson%20BSAI%20economic%20data%20collection%20meeting%20report.pdf)
- Amendment 91 AFA Chinook Salmon EDR Validation Reports, 2013 and 2014: PSMFC,
<https://www.psmfc.org/chinookedr/>
- Amendment 80 Annual Economic Data Report Validation Audit Reports, 2008-2016, PSMFC,
<http://www.psmfc.org/goatrawl/index.html>
- BSAI Crab Annual Economic Data Report Validation Audit Reports, 1998-2016, PSMFC,
http://www.psmfc.org/alaska_crab/

3.3 EDR Program Operations

Data Collection To-date: Summary of EDR Forms and Compliance.

Table 5 summarizes the number of EDR forms submitted for each reporting year, beginning with historical Crab EDR forms that were submitted to PSMFC in 2005. The table reports submission of completed and certified EDR data forms. Certification-only EDR submissions are not shown.¹⁸ Compliance with EDR submission requirements is effectively 100%. Gross noncompliance with EDR submission requirements has been limited to a small number of cases that involved bankruptcy and/or more extensive violations of federal fishery regulations. Late EDR submissions are handled by PSMFC on case-by-case grant of deadline extensions up to two-weeks. Since 2005, 40 EDR submissions have been referred to NMFS Office of Law Enforcement (OLE) due to multiple missed deadline extensions or failure to provide timely response to audit requests. Other than one formal written warning from NMFS's OLE in 2007, late EDR and audit materials have been submitted following phone contact from OLE.

Timely compliance with EDR submission and audit requests have been somewhat more problematic in the GOA CV sector, but not excessive for a reporting requirement, and submitters have generally cooperated with PSMFC in good-faith to complete EDR submissions and audit requirements.

Table 5 Counts of Completed EDR Data Forms by EDR Reporting Year

EDR Reporting Year	CRAB EDR			A80/GOA TRAWL EDR			A91 CHINOOK SALMON EDR			All EDR Forms
	CV	CP	Processors	A80/GOA CP	CV	GOA SP	CTR	Fuel Survey	Vessel Master Survey	
1998	218	8	25							251
2001	218	7	23							248
2004	237	10	20							267
Total 1998-2004	673	25	68							766
2005	166	8	17							191
2006	96	5	13							114
2007	82	5	14							101
2008	91	5	15	24						135
2009	84	5	18	23						130
2010	76	3	18	24						121
2011	74	3	19	24						120

¹⁸ As described in Section 4.2, certification-only submissions occur in cases where entities are subject to the EDR submission as a permit holder or owner of a vessel or processing plant under the applicable subsection of 50 CFR 679 or 680, but did not operate in the fishery or management program that an EDR form pertains to and is exempted from completing the data portion of the form. Certification-only Crab EDR submissions prior to 2005 were nearly equivalent to the number of completed data forms, and remained as high as 25% of the number of completed data forms through 2011. To avoid needless paperwork burden of certification-only EDRs, in 2012 PSMFC/AKFIN improved methods for minimizing the number of certification-only submissions by avoiding distribution of EDR notices to entities that can be confirmed by administrative records (e.g., catch accounting) as exempt from EDR data submission requirements.

2012	80	3	20	20			0	86	135	344
2013	79	2	24	18			0	86	133	342
2014	74	2	19	18			0	75	126	314
2015	80	2	19	19	69	12	0	64	121	386
2016	80	2	18	18	70	6	0	65	117	376
2017	70	2	18	20	66	13	0	61	116	366
2018	65	2	18	28	91	9	0	61	111	385
2019	66	2	19	29	80	7	0	53	97	353
2020	62	2	19	27	85	8	0	58	109	370
Total To-date	1998	78	356	292	461	55	0	609	1065	4914

Source: Pacific States Marine Fisheries Commission.

Data Verification/audit Administration

EDR data verification is required under EDR regulations in 50 CFR 679 and 680. The regulations state that “the DCA shall...” (680.6), or “NMFS, the DCA, or the DDCA will...” (679 subsections 65, 94, and 110) “conduct verification of information with [a person required to submit the applicable EDR or a designated representative]”. In the subsections that follow this *shall* direction to the DCA, the regulations require the EDR submitter to respond to inquiries from the DCA within 20 days, require the submitter to provide supporting records to the DCA as requested, and authorize the DCA *auditor* to review the records for the purpose of substantiating values reported in the EDR.¹⁹ The Council’s intent for the verification process, and of the third-party audit in that process, is not explicitly stated in the regulations, and authorizes rather than directs that data verification is accomplished by auditor review of supporting records. In developing the data verification and audit procedures for PSMFC, Alaska Fisheries Science Center has relied on the Council’s record of decision for guidance regarding intent. The Crab Rationalization Program RIR/IRFA (NMFS, 2004b) provides this background, and has been re-used in subsequent analyses for the other EDRs:

“Anticipated Enforcement of the Data Collection Program

The analysts anticipate that enforcement of the data collection program will be different from enforcement programs used to ensure that accurate landings are reported. It is critical that landings data are reported in an accurate and timely manner, especially under an IFQ system, to properly monitor catch and remaining quota.

However, because it is unlikely that the economic data will be used for in-season management, it is anticipated that persons submitting the data will have an opportunity to correct omissions and errors before any enforcement action would be taken. Giving the person submitting data a chance to correct problems is considered important because of the complexities associated with generating these data. Only if the agency and the

¹⁹ Under 680.2, “Auditor means an examiner employed by, or under contract to, the data collection agent to verify data submitted in an economic data report.” There is some inconsistency between the 679 and 680 regulations pertaining to NMFS’ access to supporting records and roles of NMFS, the DCA, and the third-party auditor (DDCA) in verification audits; 680.6(f) states the clearest differentiation between the role of the DCA versus the DDCA, and PSMFC’s audit procedures have been developed by AFSC based on the 680.6 specification.

person submitting the data cannot reach a solution would the enforcement agency be contacted. The intent of this program is to ensure that accurate data are collected without being overly burdensome on industry for unintended errors.

A discussion of four scenarios will be presented to reflect the analysts understanding of how the enforcement program would function. The four scenarios are: 1) a case where no information is provided on a survey; 2) a case where partial information is provided; 3) a case where the agency has questions regarding the accuracy of the data that has been submitted; and 4) a case where a random “audit” to verify the data does not agree with data submitted in the survey.

In the first case, the person required to fill out the survey does not do so. In the second case, the person fills out some of the requested information, but the survey is incomplete. Under either case that person would be contacted by the agency collecting the data and asked to fulfill their obligation to provide the required information. If the problem is resolved and the requested data are provided, no other action would be taken. If that person does not comply with the request, the collecting agency would notify enforcement that the person is not complying with the requirement to provide the data. Enforcement would then use their discretion regarding the best method to achieve compliance. Those methods would likely include fines or loss of quota and could include criminal prosecution.

In the third case the person fills out all of the requested information, but the agency collecting the data, or the analysts using the data, have questions regarding some of the information provided. For example, this may occur when information provided by one company is much different than that provided by similar companies. These data would only be called into question when obvious differences are encountered. Should these cases arise, the agency collecting the data would request that the person providing the data double check the information. Any reporting errors could be corrected at that time. If the person submitting the data indicates that the data are accurate and the agency still has questions regarding the data, that firm’s data could be “audited”. It is anticipated that the review of data would be conducted by an accounting firm selected jointly by the agency and members of industry. Only when that firm refuses to comply with the collecting agencies attempts to verify the accuracy of the data would enforcement be contacted. Once contacted, enforcement would once again use their discretion on how to achieve compliance.

The fourth case would result when the “audit” reports different information than the survey. The “audit” procedure being contemplated is a verification protocol similar to that which was envisioned for use in the pollock data collection program developed by NMFS and Pacific States Marine Fisheries Commission (PSMFC). During the design of this process, input from certified public accountants was solicited in order to develop a verification process that is less costly and cumbersome than a typical “audit” procedure. That protocol involves using an accounting firm, agreed upon by the agency and industry, to conduct a random review of certain elements of the data provided.”

“Since some of the information requested in the surveys may not be maintained by companies and must be calculated, it is possible that differences between the “audited” data from financial statements and survey data may arise. In that case the person filling out the survey would be asked to show how their numbers were derived (footnote 41). If their explanation resolves the problem, there would be no further action needed. If

questions remained, the agency would continue to work with the providers of the data. Only when an impasse is reached would enforcement be called upon to resolve the issue. It is hoped that this system would help to prevent abuse of the verification and enforcement authority.

In summary, members of the crab industry will be contacted and given the opportunity to explain and/or correct any problems with the data, that are not willful and intentional attempts to mislead, before enforcement actions are taken. Agency staff does not view enforcement of this program as they would a quota monitoring program. Because these data are not being collected in “real” time, there is the opportunity to resolve occasional problems as part of the data collection system. Development of a program that collects the best information possible to conduct analyses of the crab rationalization program, minimizes the burden on industry, and minimizes the need for enforcement actions are the goals of the data collection initiative.”
[...]

“Verification of data including auditing and error checking

The mandatory data collection program provides that verification of data, auditing, and error checking would be the primary responsibility of the third party agent. Consistent with procedures set forth in the motion, the agent will be obligated to develop an appropriate system for identifying outliers, incomplete data, or anomalies in the data submissions. Further, the third party agent will be obligated to retain qualified professional analysts or accountants to review data submissions and identify errors or flag possible fraudulent submissions.”

ASFC and PSMFC began developing data verification protocols and procedures for the Crab EDR in 2005 and have continued to improve and refine the process to efficiently identify and correct data reporting errors while reducing the cost and burden of the audit process. Prior to incorporation of EDR data into the Alaska Fish Information Network (AKFIN) relational database in 2011, EDR data validation was largely reliant on the audit process. Automated validation routines now allow PSMFC to identify most errors and obtain corrections from submitters shortly after EDRs are submitted. AFSC developed revised audit selection and review protocols in 2017, which were used by PSMFC in the RFP for Certified Public Accounting (CPA) firms to contract the audit review.

EDR data verification currently employs a series of validation procedures, including 1) primary, automated data validation procedures programmed and maintained by AKFIN on the EDR database, 2) secondary validation employing statistical procedures and visual inspection to identify data anomalies and statistical outliers, and 3) editing and imputation for data errors identified by data users that were not detected and corrected in primary and secondary validation.

Primary validation procedures involve programmed tests to identify logical errors and inconsistencies in individual EDR records, e.g., upper and lower bounds for reported values and ratios of values, crew missing data for one or more by-fishery EDR data fields where fishery participation is indicated in the EDR record or in catch accounting data. Primary routines are executed by PSMFC staff on each EDR record shortly after receiving a certified EDR submission, with follow-up contacts with submitters to obtain corrections as needed. Most primary validation errors are identified and corrected easily with a phone call and result in a re-certified EDR submission within 2 weeks of the submission.

Secondary validation begins after primary validation is completed and all EDR records are certified final by submitters. Once EDRs are completed, AKFIN completes integration of current year EDR records

with other datasets, calculation of various pro-rata and statistical indices, and plotting for visual inspection. AFSC and PSMFC review the results to identify and flag visual outliers and anomalies as potential reporting errors. Flagged values are selected for correction through follow-up by PSMFC staff, or selection to third-party verification audit.

Audit protocols specified in the Scope of Work (SOW) for PSMFC's contract with EDR auditors require auditors to notify EDR submitters that have been selected for audit and to request appropriate supporting materials to enable auditors to substantiate reported values. After audit selections have been identified, and prior to the auditor distributing notices, ASFC and PSMFC consult with the auditor to determine the appropriate forms of supporting evidence and level of review appropriate for different types of data. For example, quota lease data tends to be more challenging to validate and requires a higher level of review compared to provisions costs. Once auditors have received the requested records, and/or with additional phone contacts, the auditors identify and confirm a correct value for the data item (either the original reported value or a corrected value). Auditors also evaluate the quality of supporting records and information provided by the submitter, and characterize the quality of support and nature of reporting errors using a coding system developed by AFSC and specified in the SOW.²⁰ Audit corrections are entered into the EDR database by PSMFC and AKFIN's production version of the EDR database is finalized after all audit results are entered.

As noted above, the data validation process and procedures have been implemented by AFSC and PSMFC based on interpretation of the Council's record of decision, and the third-party audit process has been modified as the process envisioned in the Council record has been implemented through alternative database management procedures that enable more timely and efficient error corrections at lower cost and burden to submitters.

Two issues that have emerged from the practical experience of AFSC and PSMFC in working with CPA firms under contract are especially worth noting: 1) in all audits reviews conducted since 2006, there has not been a single finding of intentional misreporting, or of any bias in the direction of reporting errors identified by auditors; and 2) verifying the quality of results produced by auditors requires considerable effort by AFSC and PSMFC. On the latter point, contracting for the services of CPA firms to conduct data validation audits is not straightforward, and the tasks involved are unfamiliar to CPAs and require one or two iterations to gain experience. However, CPA firms face staff turnovers and can't be relied upon to maintain staffing stability for EDR contracts, and PSMFC is required to issue RFPs to renew ongoing service every three years at minimum.

4. Alternatives Analysis

4.1 Analysis of Impacts: Alternative 1, No Action

No Action –Status Quo Conditions

If no action is taken, the status quo conditions remain unchanged. The current authorizations for third party data verification audits conducted by an independent auditor would continue in regulations. In addition, blind data formatting procedures would continue to be applied to EDR data. The Council directed guidelines for data aggregation protocol would continue to be applied to EDR data. Finally, all four EDR programs would continue to exist.

²⁰ The SOW for the audit of 2017 Annual Crab EDR data is attached as Appendix B, and all audit reports posted on PSMFC's webpages for the four EDR programs, which can be reached through PSMFC's EDR Program page at: <http://www.psmfc.org/program/prog-2?pid=17>.

Status Quo Operational Audit Procedures in 2019 and the Future

The April 2019 Council Motion identified in action Component 1 the elimination of requirements for third party data auditing under existing programs and also to reduce burdens associated with this process. As discussed previously, third party data auditing is not strictly required but it is authorized and has been used over the life of the EDR programs to conduct data verification that has now been, through the auditing process, automated and streamlined resulting in a trend of lower auditing costs over time. The alternative set crafted from the Council motion interprets the language of Option 1 of Alternative 2, if adopted, as striking regulatory language authorizing audits so that any potential for burdens associated with the process are eliminated. However, given Council intent to ease such burdens, the AFSC and PSMFC have procedurally suspended automatic audits. Thus, under the no action alternative, the AFSC and PSMFC have acted to ease the burdens of third party data audits. Data verification procedures will continue to be followed and the authorization for audits remains in regulation providing an incentive to industry to provide accurate and timely compliance with the EDR information collections.

EDR Program Expenditures and Cost Recovery

This section describes the financial cost of implementing the EDR Program and identifies the extent of which those costs have been recovered from the fishing industry by the National Marine Fisheries Service. These costs would continue under the status quo.

These costs are primarily borne by the AFSC. The AKRO of NMFS does also provide funds for the Crab Rationalization program and will be described in context. Cost recovery occurs after implementation of a catch share program and therefore NMFS does not track costs associated with EDRs prior to implementation.

The cost of running the EDR Program also includes the costs of the PSMFC and their subcontractors in their role as DCA, providing administrative support for the data collections, software development, web services, and database administration. Full Time Equivalent time provided by the AFSC includes oversight of PSMFCs work, performing additional data quality assurance/ quality control, survey development and refinement, collaboration with AKRO staff on Paperwork Reduction Act (PRA) clearance and publication of authorizing regulations, and associated public outreach (meetings, consultations and user support). AFSC also provides office space, computer equipment, and other administrative services.

In addition to cost recovery measures implemented by AKRO concurrently with rationalization of the crab and Central GOA rockfish fisheries and in 2000 in halibut and sablefish, new cost recovery requirements went into effect during 2016 for AFA pollock, Amendment 80, and all CDQ fisheries. The GOA Trawl fishery is not part of a catch share fishery and is therefore not subject to cost recovery. The costs reported for the GOA Trawl EDR only reflect the PSMFC administrative costs and do not include the costs of NMFS staff time, and therefore serve as a lower bound on the total cost of the GOA Trawl EDR.

Table 6 describes the annual cost recovery amounts for the three cost recovery eligible EDR fisheries and the PSMFC administrative costs for the GOA Trawl EDR. Note that the cost recovery amount for the Crab EDR is listed in the first year of the crab season, but is typically received and used by NMFS and PSMFC during the NMFS fiscal year that coincides with the second year of the crab season. The costs have been quite variable in the Crab EDR Program, which averaged \$250,880 over all years, and fluctuates largely due to changes in the cost of audits each year as well as the costs associated with database administration, support, and changes to the EDR forms. Costs have remained relatively stable in the A80 EDR, averaging \$86,324. For the inshore sector of the A91 EDR, the only sector from which EDR Program costs are now recovered, costs have averaged \$54,599 per year since costs have been

recovered beginning in 2016. To approximate the cost of implementing the GOA Trawl EDR, the PSMFC administrative costs of implementing the GOA Trawl EDR are included, but have not included any NMFS staff time as these are not routinely documented for non-cost recoverable activities. These costs have averaged \$74,117 per year since 2015, with costs varying largely due to changes in the need for audits.

While these costs are not insignificant, they represent a small fraction of the ex-vessel value generated by these fisheries (Table 7) with EDR-related costs averaging 0.13% of the ex-vessel value for the Crab EDR, 0.08% for the A80 EDR, 0.03% for the A91 EDR, and 0.13% for the GOA Trawl EDR. Ex-vessel values for the Crab EDR, A80 EDR, and A91 EDR come from the annual cost recovery reports, while the values for GOA Trawl represent their GOA Trawl related ex-vessel revenue for all vessels required to submit a GOA Trawl EDR and was calculated directly by AKFIN

Table 6 Cost Recovery and PSMFC Administrative Costs of the EDR Programs

Program/Year	Crab ¹	A80	AFA ²	Cost Recovery Total	GOA Trawl ³	Total EDR cost
2005	\$150,000			\$150,000		\$150,000
2006	\$150,000			\$150,000		\$150,000
2007	\$259,938			\$259,938		\$259,938
2008	\$338,276			\$338,276		\$338,276
2009	\$314,303			\$314,303		\$314,303
2010	\$352,508			\$352,508		\$352,508
2011	\$323,588			\$323,588		\$323,588
2012	\$373,316			\$373,316		\$373,316
2013	\$318,278			\$318,278		\$318,278
2014	\$342,703			\$342,703		\$342,703
2015	\$269,583			\$269,583	\$53,771	\$323,354
2016	\$345,509	\$88,254	\$62,114	\$495,877	\$73,221	\$569,098
2017	\$180,168	\$91,482	\$66,929	\$338,579	\$91,879	\$430,458
2018	\$202,012	\$92,462	\$40,631	\$335,105	\$61,765	\$396,870
2019	\$180,224	\$87,644	\$56,989	\$324,857	\$57,486	\$382,343
2020	\$91,620	\$72,976	\$48,194	\$212,791	\$107,459	\$320,250
2021	\$72,927	\$85,123	\$52,735	\$210,786	\$73,240	\$284,026

¹ The year listed in this table reflects the first year of the crab fishing season.

² Only includes costs associated with the inshore sector

³ Only includes PSMFC administrative costs

Table 7 EDR Program Costs as Share of Fishery Ex-Vessel Value

Program/Year	Crab ¹	A80	AFA ²	GOA Trawl ³
2005	0.11%			
2006	0.13%			
2007	0.13%			
2008	0.16%			
2009	0.21%			
2010	0.13%			
2011	0.11%			
2012	0.16%			
2013	0.15%			
2014	0.15%			
2015	0.12%			0.08%
2016	0.18%	0.10%	0.04%	0.11%
2017	0.11%	0.08%	0.04%	0.13%
2018	0.11%	0.07%	0.02%	0.09%
2019	0.09%	0.08%	0.03%	0.11%
2020	0.04%	0.08%	0.03%	0.24%

¹ The year listed in this table reflects the first year of the crab fishing season.

² Only includes the inshore sector.

³ Only includes PSMFC administrative costs.

Estimated Cost to Industry of Preparing and Submitting EDRs

Table 8 summarizes the estimated hours and costs to industry of preparing and submitting each form or information collection component of the four Alaska EDRs. Additional information about these estimates is in the EDR discussion paper and on www.reginfo.gov.²¹ The table provides the estimated annual number of respondents for each form or component each year, the estimated time it takes a respondent to prepare and submit the required information, the estimated cost per hour for preparing and submitting each response, the estimated annual cost per respondent, and the estimated annual total labor cost for all respondents. The rows title “Total for Collection” show the estimated annual total labor cost of submitting the required EDR information for each of the four EDR programs. For example, NMFS estimates that it costs approximately \$312,245 per year for respondents to provide the information required for the crab EDR, approximately \$24,420 per year for the A80 EDR, approximately \$64,935 per year for the GOA Trawl EDR, and approximately \$23,717 per year for the A91 EDR. The total estimated cost for all of the EDRs is \$425,317. These are the cost estimates for preparing, reviewing, and submitting the required information and are in addition to the EDR administrative costs described in Table 6, some of which are recovered from the industry through cost recovery.

The estimates of time burden and cost per hour in Table 8 represent the estimates used in the most recent PRA supporting statements or updates generated since then through ongoing operation of the program.

²¹ The supporting statements describing the information collection requirements and estimates of time burden and cost are available for each information collection on www.reginfo.gov. Search for the following “OMB collection numbers”: Crab EDR (0648-0518), Amendment 80 and GOA trawl CP EDR (0648-0564), GOA trawl EDR (0648-0700), and BS Chinook salmon bycatch EDR (0648-0633).

NMFS solicits comments on these burden hour estimates and cost estimates in the proposed rule for the information collection requirement and again in each 3-year renewal. If specific comments are received on the burden hour or cost estimates, NMFS generally adjusts the estimates in the specific collection.

The burden estimates used in Table 8 represent a fairly wide range of hourly cost estimates across the EDR programs. The cost estimates used at EDR implementation were based on comments received that explained the type of expertise needed to complete these particular EDRs and provided the associated costs per hour for people with this expertise. Based on Bureau of Labor Statistics data a \$37 per hour estimate is an average hourly cost estimate used for forms and components in most of NMFS' information collections. This estimate is based on the assumption that information is being submitted by operators of small vessels or administrative or management staff in processing plants or fishing companies, and the closest average compensation for Federal Government employees of comparable responsibility and compensation. Each PRA renewal package contains a survey of industry that specifically asks whether the cost estimates are appropriate. The estimates of \$165 per hour for the crab EDR have not received comment and is based on the complexity of that information collection. The original \$75 per hour estimate for the A91 EDR has been adjusted to \$37 based on public comment received during the most recent PRA renewal.

Table 8 provides the most recent three-year average of the implementation costs, as it coincides with the suspension of automated audits, which has reduced annual costs of the EDRs. Implementation costs include both staff time and PSMFC program costs when cost recovery is required. Also shown in Table 8 is the total burden and cost per EDR respondent per year using the PRA estimate of burden, the three year average of implementation costs, and the number of respondents. Note that EDRs that use multiple forms may have more responses than respondents; however, those response numbers are used to calculate the total burden hours and the resulting total burden cost. Respondent numbers are used here to provide the per respondent average, acknowledging that multiple respondents may be from a single fishing company.

Total cost per respondent varies considerably across the EDR information collections. The highest annual estimate is \$4,497 for Crab EDR respondents. This, as mentioned above, is a function of a much higher burden hour labor rate than used to assess the cost of the other EDRs. The A80 EDR is estimated to cost \$3,544 annually. This estimated cost reflects the complexity of the information collection and the number of burden hours required to complete the electronic forms. GOA Trawl EDR annual estimated cost is approximately \$555 per respondent. This estimate only includes the respondent burden because a cost recovery component does not exist. If cost recovery existed for GOA Trawl, the annual estimated cost per respondent would be \$1,234. Finally, the A91 EDR is estimated to cost approximately \$509 annually per respondent. This estimate is lower than in the past due to the adjustment to a \$37/hour burdened rate as well as by having fewer responses than in previous years.

Table 8 Estimated Number of Respondents, Burden Cost, Implementation Cost and Respondent Total Cost Per Year Associated with Preparation and Implementation of Alaska Economic Data Reports.

Program	Total annual respondents	Annual burden hours	Annual burden cost	Average annual implementation cost (2019-21)	Total burden and cost per respondent per year
Crab Rationalization	95	1,893	\$312,245	\$114,924	\$4,497
GOA Trawl CV/SS	117	1,755	\$64,935	\$79,395*	\$1,234/\$555***
A80 /GOA Trawl CP	30	660	\$24,420	\$81,915	\$3,544
A91 Chinook bycatch	150	644	\$23,717	\$52,640	\$509

* AFSC and NMFS Office of Science and Technology cover these costs

** Industry burden and cost per respondent per year

*** Industry portion of costs without cost recovery

Note: 2019-2021 average annual implementation costs represent the most recent three year average used in PRA renewal analyses and also represents average annual costs since suspension of automated audits.

4.2 Analysis of Impacts: Alternative 2, Option 1

Adoption of Alternative 2, Option 1, would remove data verification audit authorizations in 50 CFR 679 and 680, and amend and clarify the Crab FMP text of section 14.7 as shown in Appendix A. Removal of the audit authorization would prevent the DCA from contracting with a third party auditor to conduct the audit portion of the data verification. However, EDR data verification currently employs a series of validation procedures, including 1) primary, automated data validation procedures programmed and maintained by AKFIN on the EDR database, 2) secondary validation employing statistical procedures and visual inspection to identify data anomalies and statistical outliers, and 3) editing and imputation for data errors identified by data users that were not detected and corrected in primary and secondary validation. These data validation procedures would remain in place and continue to be used under this Option. This Option of Alternative 2 only affects the audit authorization.

Two issues that have emerged from the practical experience of AFSC and PSMFC in working with CPA firms under contract are especially worth noting: 1) in all audits reviews conducted since 2006, there has not been a single finding of intentional misreporting, or of any bias in the direction of reporting errors identified by auditors; and 2) verifying the quality of results produced by auditors requires considerable effort by AFSC and PSMFC. On the latter point, contracting for the services of CPA firms to conduct data validation audits is not straightforward, and the tasks involved are unfamiliar to CPAs and require one or two iterations to gain experience. However, CPA firms face staff turnovers and can't be relied upon to maintain staffing stability for EDR contracts, and PSMFC is required to issue RFPs to renew ongoing service every three years at minimum. This Component, by eliminating audit authorization would eliminate these issues and difficulties.

Verification and audit costs borne by industry are provided in Table 8. As mentioned previously, the estimates of time burden and cost per hour represent the estimates used in the most recent PRA supporting statements or updates generated since then through ongoing operation of the program. NMFS solicits comments on these burden hour estimates and cost estimates in the proposed rule for the information collection requirement and again in each 3-year renewal. PRA supporting statement data indicates that the verification and audit processes accrue an annual cost estimated to be approximately as follows,

- Crab EDR: \$26,400
- A80 EDR: \$1,480
- GOA Trawl EDR: \$2,405
- A91 EDR: \$0 (No compensated transfers have occurred)

Under this Option, data verification will continue with some portion of these costs continuing. Removal of the audit authorization would eliminate the potential for these audits to occur and would eliminate the potential for much of the auditing cost to be incurred; however, much of this cost has already been procedurally eliminated under the status quo with audits being limited to cases of noncompliance.

In addition to the estimated cost of industry compliance with audits there is also contracting cost that would be eliminated. PSMFC has provided, with permission from contractors, data that documents the contracting costs that have been incurred to conduct auditing in the EDR programs. A review of that data shows that the Crab EDR costs have ranged from approximately \$65,000 annually to as low as about \$22,000 annually and have generally been falling over the life of the Crab EDR Program. Audits were done in the A91 program in 2013 and 2014 with costs of between \$15,000 and \$18,000 annually for audits of the fuel and master surveys. A91 audits are authorized for the compensated transfer report portion of the A91 EDR; however, there have not been any compensated transfers and, thus, no associated audit contracting costs. A80 EDR and GOA Trawl EDR combined have had auditing costs of \$30,000 to \$35,000 annually. This component would eliminate the potential for the EDR program operated by AFSC and PSMFC to incur these audit contracting costs.

4.3 Analysis of Impacts: Alternative 2, Option 2

Option 2 of Alternative 2 would revise requirements for aggregation of data across submitters and blind formatting in the crab data collection program to make those data aggregations and confidentiality protections comparable to the requirements under other data collection programs.

The DCA/blind-data rule requires the collection of EDR forms to be performed by a third-party DCA (PSMFC), and requires removal of unique identifiers (e.g., vessel identifiers, permit numbers) from EDR data records accessible to Council and agency staff. However, the Council only required this for Crab EDR and GOA Trawl EDR data. The blind data rule was considered when developing the A80 and A91 EDRs, but was not included in the preferred alternatives for those EDRs. The blind-data requirement introduces significant administrative challenges for AFSC's oversight and management of the EDR program in collaboration with PSMFC because AFSC staff responsible for oversight of data verification and validation processes are prohibited from access to identifying information. This has substantially impeded timely completion of verification audits and production of economic SAFE reports on some occasions. In contrast, the DCA/blind data regulations in 679.110 and 680.6 do not prohibit PSMFC from authorizing subcontractors to access identifiers in EDR records (subject to nondisclosure agreements). This is necessary for some IT application and database development for EDRs performed for PSMFC under contract. In principle, this would not prohibit release of EDR microdata containing identifiers to individuals contracted and authorized to perform research and analyses using EDR data, but PSMFC and AFSC have consistently applied the blind-data protocol for all EDR data released to contractors authorized for such purposes.

The unique confidentiality protocols that apply to EDR data records also impose limitations on the usability of the data. The designated DCA and "blind-data" protocol, and the five record aggregation standard, are unique to EDR data, and were introduced by the Council as part of the Crab EDR program

to apply a higher standard of confidential data protection to the cost data and other proprietary business information collected in EDRs. Apart from the particular implications of each element on usability and access to EDR data discussed below, these requirements are an additional aspect of the inconsistency of EDR data that impedes regular use by Council and NMFS analysts. Analysts' use of EDR data involves increased material and perceived risk of inadvertently disclosing confidential data. This has likely resulted in avoidance of using EDR data in cases where it may have been the best information available, but alternatives with lower risk and complexity were chosen for the sake of timeliness.

The Council's guideline aggregation standard specifies that a minimum of five distinct EDR records is required for public release of aggregated statistics and tabular summaries derived from EDR records. This is in contrast to the standards applied to other confidential commercial fisheries data under NMFS and Council reciprocal access agreements and MOAs with ADFG and CFEC, and respective agency administrative rules concerning confidential data.²² After consulting with ADF&G and AKRO staff, the five record guideline was proposed by the AFSC in 2006 in response to a Council request for confidentiality and data quality standards for use of Crab EDR data. The Council recommended this standard as a guideline rather than a formal requirement implemented in EDR regulations, and AFSC has subsequently applied this standard to all public release of statistical summaries using any EDR program data.

The small number of vessel and processor entities represented in EDR records, particularly in CR crab fisheries, requires confidential data suppression of significant portions of the data collected in EDRs. In particular, the small number of crab processors providing custom crab processing services prevents release of data reported in the Crab Processor EDR form for custom processing service fees paid by buyers and revenue received by custom process providers. This represents a substantial fraction of the data reported in the crab processor EDR. Applying a three record aggregation standard would allow reporting of custom processing data to some extent, but in many cases, there are only one or two providers within a given crab fishery. The five record aggregation standard also requires data suppression for cost and employment data in smaller crab fisheries that would otherwise be publishable under three record standard. It is also notable that, in the potential event of Chinook salmon PSC transfers that would be subject to reporting in the A91 CTR form, application of the five record aggregation standard could prevent release of information on compensated transfers to the Council or public.

The elimination of blind formatting in Option 2 would require a regulatory amendment as identified in Appendix A. However, the data aggregation standard applied to EDR data is a Council guideline and is not specified in regulations. If adopted by the Council, Option 2 would provide a revised recommendation to follow existing data handling standards applied to commercial fisheries data as a guideline to the AFSC regarding EDR data confidentiality standards and consistency and would not require amendment to either FMP text or regulatory text.

4.4 Analysis of Impacts: Alternative 2, Option 3

Alternative 2, Option 3 would change the reporting frequency of the EDRs, assuming each is treated individually, from annually to once every two years, once every three years, or once every five years. Since this Option is focused on reducing respondent burden it is further assumed that the reporting would be limited to the single year prior to the reporting deadline rather than the cumulative information for all years since the last report was made. In this way, respondent burden of collecting and maintaining

²² See Confidentiality Of Fisheries Information, Divisional Operating Procedure (DOP) CF-008, ADF&G Division of Commercial Fisheries.

http://www.adfg.alaska.gov/static/home/news/hottopics/cook_inlet_salmon_task_force/pdfs/dopcf-008.pdf

multiple years of data is minimized to the most recent year. In practicality, some EDR data may still require annual or continuous recordkeeping and staff time; however, the industry costs of reporting the data on the electronic EDR forms, as identified in Table 8, would be similar to the current annual estimates but not incurred as frequently.

Reducing the frequency of EDR reporting would reduce the industry reporting cost burden for the EDRs. Changing the frequency of reporting to every two years would reduce the total reporting cost by 50%, assuming no other changes in numbers of respondents or burden hour cost rate applied to the collection (*ceteris paribus*). Similarly, changing the frequency of collection to once every three years would reduce costs over a period of time by 66%, and collection every five years would reduce costs by 80%.

Changes in agency costs associated with the implementation of the EDRs as frequency is changed is more difficult to assess than industry reporting costs. The agency costs include NMFS staff time for forms management, data review and verification, and analysis and reporting for the Crab and A80 EDRs. Also included are the PSMFC costs for staff time to administer the EDRs, as well as maintaining databases and web-based electronic forms. Some of these costs would presumably decrease with reduced frequency of collections thereby reducing some cost recovery fees charged to industry. However, the EDR data collections, verification processes, database infrastructure, and web-based electronic forms would still need to be maintained in order to monitor and manage the EDR information collections. Thus, staff and/or contractors would have to be retained but may be available for other agency tasking in years when EDR data is not submitted. The loss of cost recovery in years when EDRs are not required to be submitted would mean that agency operating costs would increase but cost recovery fees borne by industry would be reduced.

Another factor affecting how agency implementation costs may change with changing frequency is whether all EDRs are changed to the same frequency versus certain individual EDRs having differing frequency of collection. In a staggered approach, implementation costs would also be somewhat spread out but the need to maintain EDR processing capabilities would remain.

The issue of EDR frequency was discussed during the SSPTs EDR outreach meetings and is detailed in the November 2020 EDR workshop report presented to the Council in April of 2021. Summarized responses are excerpted and provided here for context of stakeholder views on changing the frequency of the EDR collections. There may be differences of opinion expressed in these summaries so they are not ranked or ordered and represent the flow of the conversations:

- There are other ways of adjusting the frequency of EDRs to reduce burden.
- Some information that does not change often and could be incorporated into the EDR with a different frequency.
- When an EDR program is initially implemented the first years of reporting are more burdensome than subsequent years.
- Data quality improves and reporting burden decreases as respondents gain familiarity with the reporting process over time.
- Across the four discussions, industry participants felt reducing the frequency of EDR collections would reduce reporting burden.
- A participant in the Amendment 80 discussion noted there is some information they would continue to monitor annually to see if it is on trend.

- Participants in the BSAI crab discussion commented they do track some information and maintain recordkeeping with EDRs in mind but that information is generally drawn from routine annual bookkeeping.
- Participants also felt completing EDRs less frequently should not contribute to data quality issues.
- The group felt EDRs should be sufficiently straightforward that a new bookkeeper could complete them without difficulty.
- GOA trawl participants questioned whether analysts have seen an improvement in data quality of the duration of the GOA Trawl and other EDR programs.
- Multiple groups also recognized that less frequent EDR reporting could impact the utility of EDR data for monitoring and interpreting trends over
- Year-to-year changes might not be captured, particularly if there is an event (e.g., Covid-19) that impacts the economics of a fleet in a year that data is not collected.
- Some participants agreed there is value in monitoring trends over time and understanding the impacts of anomalies and fishery events.
- Some participants also felt reducing the frequency of data collection would be inconsistent with the purpose and need and objectives for their sector's EDR programs.
- Regarding the Amendment 91 fuel survey, one participant commented that less frequent reporting would be less valuable unless looking at an average over time.
- Another commented there is already a baseline for fuel costs in terms of vessel characteristics by mode, and that year-to-year differences are mostly a function of fuel price.
- In the GOA Trawl group a participant commented that a longer interval between data collections would not be consistent with the intent of establishing a baseline to monitor the impacts of fishery rationalization.

Several important considerations can be discerned from the various points of view expressed by SSPT outreach meeting participants. Across the EDRs, respondents all felt that reducing frequency would reduce the burden of reporting. However several caveats emerge from the discussion. First, there are ways to reduce burden associated with EDR submissions other than changing the frequency from annual to periodic. Some of these reductions in burden may come about through the “small changes” the SSPT discussed. These small changes are detailed in the SSPT report from April 2021 (pages 5 and 9) and include the following;

- Addressing inconsistencies between reporting ex-vessel value and lease costs versus gross revenues used in crew settlements and NMFS landings records and IFQ permit deductions,
- Pre-populating some data fields that do not change annually,
- Possibly eliminating days fishing and days processing from EDR forms,
- Revising the way capital expenditures are reported.

A second theme is that EDR reporting improves and burden is reduced over time. As respondents gain familiarity with the reporting forms burden is reduced and data quality and consistency may improve.

Some data fields would continue to be tracked by industry on an annual basis as part of routine annual bookkeeping. Thus, changes in frequency would reduce burden of submitting annually but standard bookkeeping practices would likely be maintained.

A third theme is that changing the frequency of the EDRs may not be consistent with the purpose and need, and objectives of, the EDR and could reduce the quality of the data. Some data may be best captured with averages and less frequent reporting would make averages less accurate and less useful. Changing the frequency of the EDRs may also be inconsistent with the intent of establishing a baseline to allow ongoing monitoring of the economic and social effects of establishing a rationalization program.

Finally, a fourth theme is that changing the frequency of EDR reporting raises substantial risk of not collecting data that would describe year to year events such as Covid-19, or climate anomalies such as ocean acidification and temperature shifts. Changing the frequency of EDR collections could affect the utility of EDR data for monitoring and interpreting trends over time. To the extent that there is value in monitoring trends over time and in understanding the impacts of anomalies and fishery events, changing the frequency of EDR reporting could diminish that value and understanding. Participants did express that changing the frequency of the EDR reporting should not contribute to data quality issues; however, the loss of one or more years of data in a time series, and the loss of data to capture extreme events, calls into question whether changing the frequency of EDR reporting can be done without adversely affecting data quality.

4.5 Analysis of Impacts: Alternative 3, Options 1-4

Options 1-4 of Alternative 3 remove the specified individual EDR requirements from regulation. The potential impacts on costs and on fishery monitoring and management are discussed for each option below. The options are not mutually exclusive.

Option 1: Eliminate the GOA Trawl EDR Requirements

Elimination of the GOA Trawl EDR program would eliminate the associated EDR program costs incurred by AFSC and PSMFC. Estimated annual programmatic costs attributable to the GOA Trawl EDR are shown in Table 8. To approximate the cost of implementing the GOA Trawl EDR, the PSMFC administrative costs of implementing the GOA Trawl EDR are included, but have not included any NMFS staff time as these are not routinely documented for non-cost recoverable activities. These costs are estimated to presently be \$79,395, with costs varying largely due to changes in the need for audits. Elimination of the GOA Trawl EDR would eliminate the agency borne programmatic costs incurred by AFSC and PSMFC as the GOA Trawl EDR is not part of a catch share fishery and thus administrative costs are not subject to cost recovery.

Elimination of the GOA Trawl EDR program would also eliminate compliance costs for industry. Table 8 summarizes the estimated hours and costs to industry of preparing and submitting each form or information collection component of the four Alaska EDRs. The table provides the estimated annual number of respondents for each form or component each year, the estimated time it takes a respondent to prepare and submit the required information, the estimated cost per hour for preparing and submitting each response, the estimated annual cost per respondent, and the estimated annual total labor cost for all respondents. The rows title "Total for Collection" show the estimated annual total labor cost of submitting the required EDR information for each of the four EDR programs. NMFS estimates that it costs approximately \$64,935 per year for the GOA trawl catcher vessel and processors EDR. Elimination of the program would eliminate these compliance costs. However, the audit portion of these costs (~\$2,500) has been procedurally eliminated under the status quo.

In its original purpose and need statement for the GOA Trawl EDR within its February 2013 motion the Council identified a need to establish a baseline information collection that can be used to assess the impacts of a catch share program particularly on affected harvesters, processors, and communities in the GOA. However, Council action on GOA bycatch management was suspended in December of 2016. Thus, the original need for this data collection program has been indefinitely suspended calling into question the efficacy of continuing the program given that it has demonstrated programmatic costs born ultimately by tax payers as well as industry compliance costs.

The fundamental question is whether continuing this time series data collection is appropriate given the limitations of this data. For example, the reporting of non-labor vessel cost data in the CV EDR is limited, and is inconsistent with the structure employed in other EDRs. Despite the Council's stated intent in implementing the GOA EDR to use components from other EDRs that have demonstrated utility and quality, the specifications of two of three non-labor cost elements in the CV form are unique: annual trawl gear cost is reported as inclusive of all expenditures, including expensed items and capitalized purchases; annual expenditures on salmon and halibut excluder gear is also combined over expensed and capitalized purchases, and is not collected in any other EDR.

Further, the GOA processor EDR collects processing labor data as: number of employees by month, and labor hours and gross pay, by month and housed/not housed. This has two potentially important limitations: 1) regular and overtime hours should be reported separately in order to control for the relative effect of overtime premiums on average labor cost, and 2) the different stratification applied to employee counts compared to labor hours and pay limits the ability to identify the number of housed and non-housed employees; the employment data should be differentiated by housing status, consistent with labor hours and pay. The collection of monthly water and electrical utility consumption by processing plants is of some concern as well. The data are not generalizable as the variables only apply to Kodiak plants, and do not adequately capture energy and water costs to plants that are not fully dependent on municipal utility supply. The narrow scope of this data as currently collected may be more suited to an administrative reporting requirement than an EDR.

An important limitation on the use of EDR data for specific applications is the frequency with which the particular management issues are taken up for consideration by the Council. For example, the Council's intent in initiating the GOA Trawl EDR was to establish a baseline of economic data for use in analyzing the effects of a change to catch-share management. Notwithstanding the suspension of GOA rationalization, the intent of the Council was to use the EDR to accumulate a set of baseline measurements, against which later measurements collected after a management change could be compared. The GOA EDR has captured a set of baseline measurements for the few variables that it collects, and may continue to accumulate a longer baseline of the same data. The usability of these data for this intended purpose is uncertain, however, given that the envisioned management transition has not occurred.

On a final note, several recent Council action analyses have used GOA Trawl EDR data. The 2016 GOA trawl bycatch management analysis included an SIA that made extensive use of EDR data. In addition, EDR data was used in the recently completed (3/8/19) analysis titled BSAI Final Review Draft Social Impact Assessment: Catcher/Processor Mothership Restrictions in the Bering Sea and Aleutian Islands and the Gulf of Alaska when taking Directed Non-CDQ Pacific Cod Deliveries from Trawl Catcher Vessels. However, in this case, complete data was not available for any of the different sectors involved and no EDR data was available for some of the sectors involved. This action was essentially an allocation (or reallocation) between sectors and it would not be acceptable to present detailed data on one sector and not another. To overcome this limitation, the analysts used some of the crew residence data for catcher vessels that filled out a GOA Trawl EDR and worked both in the GOA and the BSAI, with important caveats, as a work around solution. In addition, the SIA for the GOA Rockfish Program Reauthorization presently under consideration by the Council used GOA Trawl EDR data. Thus, there is present

utilization of the data to benefit the Council process despite the suspension of GOA Trawl bycatch management and if this EDR is eliminated that utilization will no longer be possible.

Elimination of the GOA Trawl EDR would necessarily eliminate the use of the EDR data in analyses, such as Social Impact Assessments. It would also truncate the time series of baseline economic data that could be used to inform future Council requested analyses of the GOA trawl and other fisheries. While there is not an annual reporting of economic performance parameters in the GOA trawl EDR, it does collect unique crew level data not readily replaceable from other sources. Overall, elimination of the GOA Trawl EDR eliminate the opportunities for this information to inform future Council analyses of the fishery.

Option 2. Eliminate the Crab EDR Requirements

The elimination of the Crab EDR also would eliminate agency costs as well as compliance costs. These costs, as described above are shown in Table 8. Agency costs are estimated to presently be \$114,924 annually and compliance burden costs to industry are estimated to be \$312,245 presently.

The Crab EDR data is known to have data quality limitations in its present form. Crab IFQ cost reporting in CV and CP forms shows indications that multi-vessel owners may pool quota costs across vessels, in some cases for the purpose of balancing crew share earnings to account for vessels incurring higher quota and/or fuel costs associated with northern deliveries. This conflicts with the EDR form instructions, and complicates validation of reported quota values. This may be a case in which collecting annual-level quota lease costs at the vessel-level, by CR fishery and quota type sufficiently diminishes data quality, in that vessel-level annual lease cost values are pooled over all distinct lease arrangements at the vessel level; collecting quota transaction data from QS owners could improve the calculation of reliable quota market activity statistics, including lease rates.

Processing labor data collection in the Crab EDR form currently collects hours and labor cost by CR fishery, which misses overtime hours as an important determinant of hourly earnings and total wage rates, and is a relevant indicator of labor productivity. Also, crab processing labor is collected by CR fishery, compared to GOA Trawl processors, where it is collected by month and housing status. The reasons for inconsistency are unclear, but utility of the data would increase if collected consistently across fisheries.

The crab EDR data collection has been routinely used in a number of documents. The crab annual summary is prepared as the Economic Status of the BSAI King and Tanner Crab Fisheries off Alaska (Garber-Yonts and Lee, 2021). This report presents information on economic activity in commercial crab fisheries currently managed under the Federal FMP for Bering Sea and Aleutian Islands King and Tanner Crab (with attention to the subset of fisheries included in the Crab Rationalization Program). Statistics on harvesting and processing activity; effort; revenue; labor employment and compensation; operational costs; and quota ownership, usage and disposition among participants in the fisheries are provided. Additionally, this report provides a summary of BSAI crab-related research being undertaken by the Economic and Social Sciences Research Program (ESSRP) at the AFSC. These data have been used extensively in the CR Program Reviews (NPFMC 2017), which will continue to be required every seven years. They represent a unique source of information for addressing the CR Program's underlying objectives, such as "promoting economic stability for harvesters, processors, and coastal communities" in a more comprehensive way than simply ex vessels values and landings data. These data have also been used in recent analysis such as the EA/ RIR for Crab PSC limits in the BSAI Groundfish Trawl Fisheries (NPFMC 2021) to demonstrate the economic value and employment associated with the crab fisheries and would likely continue to be used in analyses for describing fishery performance as crab stocks recover.

In addition, loss of CRAB EDR data would significantly slow the AFSC economics research program because analysts would have to rely 100% on voluntary survey data collection with consequent weaknesses of low data accuracy and significant increases in the amount of time and expense required. All surveys also require extensive review under the Paperwork Reduction Act, which can add considerably to the analytical time needed to periodically update regional economic impact models.

Elimination of the Crab EDR would necessarily eliminate this annual reporting of economic performance parameters, and unique crew level data not readily replaceable from other sources, for this fishery and eliminate the opportunities for this information to inform future CR Program Reviews, and stock rebuilding analyses. It would also hamper continued development and maintenance of the MRSAMM regional economic impact model for Alaska fisheries.

Option 3. Eliminate the BSAI Amendment 80 EDR Requirements

The A80 EDR provides a comprehensive set of cost and earnings data that supports the Council's objectives for the data collection without excessive reporting burden. Some variables, including vessel activity days and processing line throughput capacity are somewhat duplicative and may not be the best source of data for their purposes. The collection of capital expenditure data in the EDR form aggregates major, unique investment events (vessel purchase acquisitions and/or retrofits) which should be differentiated from ordinary capital improvement cycle expenditures. This can be resolved by consulting with the submitter, but as a general matter, improved methods for collecting capital investment data that are large and infrequent could be explored.

Eliminating the A80 EDR would eliminate an estimated \$81,915 in annual agency costs and \$24,420 in industry cost burden (Table 8). However, AFSC Economists would no longer prepare an annual summary report that is included as a chapter to the annual publication the Economic Status of the Groundfish Fisheries off Alaska. This summary report assesses the performance of the A80 fleet under the rationalization program and subsequent changes in fishery management. The summary reports statistics that are intended to indicate trends in a variety of economic indicators and metrics. The reported statistics provide a general overview of fishery performance over time, and are not intended as a rigorous statistical analysis of specific hypotheses regarding economic efficiency or other performance metrics. These statistics generally include changes in the physical characteristics of the participating vessels including productive capacity of vessel physical plant (freezer and processing line capacity and maximum potential throughput) and fuel consumption rates, efficiency and diversification of processing output, investment in vessel capital improvements, operational costs incurred for fishing and processing in the A80 fisheries and elsewhere, and employment and compensation of vessel crews and processing employees.

In addition, as is stated above in impacts of not having Crab EDR data, loss of A80 EDR data would significantly slow the AFSC economics research program because analysts would have to rely 100% on voluntary survey data collection with consequent weaknesses of low data accuracy and significant increases in the amount of time and expense required. All surveys also require extensive review under the Paperwork Reduction Act, which can add considerably to the analytical time needed to periodically update regional economic impact models.

Elimination of the A80 EDR would necessarily eliminate this annual reporting of economic performance parameters, and unique crew level data not readily replaceable, for this fishery and eliminate the opportunities for this information to inform future CR Program Review. It would also hamper continued development and maintenance of the MRSAMM regional economic impact model for Alaska fisheries.

Option 4. Eliminate A91 Chinook Salmon EDR Requirements

The A91 EDR consists of three electronic forms; the Vessel Fuel Survey, the Vessel Master Survey, and the Compensated Transfer Report. The A91 fuel survey collects four items of data. These are hourly fuel consumption when steaming, hourly fuel consumption when towing, annual fuel quantity, and annual fuel costs. Hourly rate data are largely estimated, and in some cases is the daily fuel cost quoted for charter rates, divided by 24. As a result, the fuel rate data is accurate to a degree, annual fuel expenditures are accurate to a higher degree, and although neither are subject to verification audit, collectively represent the best scientific information available on the operating costs of AFA pollock vessels.

The A91 Vessel Master Survey provides well-considered, detailed answers to the survey and are informative, but an increasing proportion of answers are pro-forma (verbatim duplicates of other responses) and are not likely to provide much use as an ongoing information collection. The qualitative response data requires time-consuming coding in order to analyze quantitatively, and results of formal analysis are impaired by data quality.

A compensated transfer is defined in the CTR form as one in which Chinook salmon PSC is transferred between entities in exchange for monetary compensation, with or without the exchange of any other assets (pollock quota) included in the exchange. However, the CTR form has never been completed by a submitter, and industry has reported that the fleet's incentive plan agreements essentially prohibit "compensated transfers". Thus, it is not expected that the CTR form will be used in the future unless substantial changes in incentive plan agreement requirements are undertaken. All AFA vessel owners and entity representative are required under the A91 EDR rule to complete a certification statement indicating that they did not participate in a compensated transfer.

Elimination of The A91 Chinook salmon EDR would eliminate an estimated \$52,640 in agency costs and an estimated \$23,717 in industry cost burden. Despite numerous limitations in the Chinook salmon EDR skipper survey, it is clear that the pollock fishery is balancing a complex range of management challenges. Having a census of all skippers reveals that different fishers have very different experiences in any given year, and that features such as the extent of sea ice varies considerably and impact fishing choices and the difficulty of avoiding Chinook salmon bycatch. This illustrates that some vessels may be much more flexible at moving in response to changing target and bycatch encounter rates. **Thus, elimination of the A91 Chinook salmon EDR will necessarily reduce analysts' insights and understanding of the diversity within the fleet and that may affect analysis of future Bering Sea salmon bycatch issues. Elimination of the A91 EDR will also eliminate collection of fuel cost data, which is presently the best scientific information available on the operating costs of AFA pollock vessels.**

4.6 Affected Small Entities (Regulatory Flexibility Act Considerations)

Section 603 of the Regulatory Flexibility Act (RFA) requires that an initial regulatory flexibility analysis (IRFA) be prepared to identify whether a proposed action will result in a disproportionate and/or significant adverse economic impact on the directly regulated small entities, and to consider any alternatives that would lessen this adverse economic impact to those small entities. NMFS prepares the IRFA in the classification section of the proposed rule for an action. Therefore, the preparation of a separate IRFA is not necessary for the Council to recommend a preferred alternative. This section provides information about the directly regulated small entities that NMFS will use to prepare the IRFA for this action if the Council recommends regulatory amendments.

This section also identifies the general nature of the potential economic impacts on directly regulated small entities, specifically addressing whether the impacts may be adverse or beneficial. The exact nature of the costs and benefits of each alternative is addressed in the impact analysis sections of the RIR and is

not repeated in this section, unless the costs and benefits described elsewhere in the RIR differs between small and large entities.

The alternatives considered in this analysis would directly regulate the owners of vessels or processors, or leaseholders of vessels, required to submit EDRs to NMFS. These include 1) AFA CVs, AFA CPs, AFA Motherships; 2) Crab Rationalization CVs, CPs, and shoreside processors; 3) Amendment 80 Trawl CPs; 4) GOA Trawl CVs and shoreside processors; and 5) The six Western Alaska CDQ organizations.

The thresholds applied to determine if an entity or group of entities is a small business under the RFA depend on the industry classification for the entity or entities. Businesses classified as primarily engaged in commercial fishing are considered small entities if they have combined annual gross receipts not in excess of \$11.0 million for all affiliated operations worldwide (81 FR 4469; January 26, 2016).

Businesses classified as primarily engaged in fish processing are considered small entities if they employ 750 or fewer persons on a full-time, part-time, temporary, or other basis, at all affiliated operations worldwide. Since at least 1993, NMFS has considered catcher/processors to be predominantly engaged in fish harvesting rather than fish processing; however, motherships in the AFA fishery are prohibited from fishing and are considered to be processing facilities and subject to the 710 person threshold. Of note is that NMFS AKRO does not have access to consistent and accurate processing worker numbers for motherships, floating stationary processors, or shore based processing plants. Thus, lacking information with which to conduct a threshold analysis, such entities are considered to be small entities for RFA purposes.

NMFS considers members of fishing cooperatives affiliated for purposes of applying thresholds for identifying small entities. In making this determination, NMFS considered Small Business Administration's (SBA's) "principles of affiliation" at 13 CFR 121.103. Specifically, in § 121.103(f), SBA refers to "[A]ffiliation based on identity of interest," which states "[A]ffiliation may arise among two or more persons with an identity of interest. Individuals or firms that have identical or substantially identical business or economic interests (such as family members, individuals or firms with common investments, or firms that are economically dependent through contractual or other relationships) may be treated as one party with such interests aggregated." If business entities are affiliated, then the threshold for identifying small entities is applied to the group of affiliated entities rather than on an individual entity basis.

Many of the directly regulated entities potentially affected by this action are considered to be large entities based on cooperative affiliations. These include the AFA CPs, AFA CVs, Amendment 80 CPs, and the Crab CVs. However, there are three AFA Motherships that are not likely to exceed the 750 person threshold individually or within the fishing cooperative that they belong to and they are considered to be directly regulated small entities. There is also one Amendment 80 eligible CP that is subject to the A80 EDR that is a small entity with no known cooperative affiliations.

Similarly, shoreside processors participating in the Crab EDR and GOA Trawl EDR are considered to be directly regulated small entities and can include "shore based" custom processors that do not operate out of a shoreside plant. The numbers of directly regulated small entities in the shoreside/shore based component of the GOA Trawl EDR varies considerably from year to year, depending on custom processing, and has been as high as seventeen in recent years. In addition, 19 shoreside crab processors are considered to be directly regulated small entities. In addition, the six CDQ organizations are directly regulated small entities within one or more of the EDRs. In addition, analysis conducted for the most recent renewal of the GOA Trawl EDR, under the Paperwork Reduction Act, found that 26 of the 78 EDR respondents are directly regulated small entities.

The alternatives that would directly regulate those responsible to submit EDRs to NMFS are Alternative 2, Option 1 (options for reducing or removing third party data verification audits), Alternative 2, Option 3 (changing the frequency of EDR reporting), and Alternative 3, options 1-4 (removing requirements for individual EDRs). In all cases, the proposed actions would **reduce** the costs of the EDR requirements to the directly regulated entities.

4.7 Management and Enforcement Considerations

Alternative 1, No Action, Audit Authorization Incentive

As discussed under impacts of the status quo, the AFSC and PSMFC have opted to not contract with an auditing firm in 2019 and have procedurally suspended automatic audits. Thus, under the no action alternative, the AFSC and PSMFC have acted, in 2019 and potentially into the future, to ease the burdens of third party data audits. Data verification procedures will continue to be followed and the authorization for audits remains in regulation providing an incentive to industry to provide accurate and timely compliance with the EDR information collections. Thus, NMFS has procedurally eliminated routine third-party data verification audits and limits the audit requirement, under the status quo alternative, to instances of noncompliance with EDR submission requirements.

Alternative 2, Option 1 Combined with Option 2

Alternative 2, Option 1, would remove status quo authorizations for EDR third party data audits. This action could potentially remove a strong incentive for industry to continue to provide accurate and timely EDR data submission, as there is no risk of bearing the cost of an audit. Enforcement actions would still be possible in cases of noncompliance; however, without the auditing tool it is unclear how enforcement would become aware of noncompliance if data is blind formatted. What this implies is that if Option 1 is adopted, elimination potential for audits, then noncompliance would be masked in blind formatted data, as data analysts would not know from whom the noncompliant data was submitted. This may hamper enforcement of EDR regulations. Of course if Option 2 is also adopted that would eliminate blind data formatting making identification of noncompliance possible at the data analyst level with possible referral for enforcement investigation

Alternative 2, Option 3

Changing the frequency of the EDR information collections may complicate program management, especially if differing frequencies are established for individual EDRs. EDR submissions and associated agency implementation processes would have to be substantially adjusted, including the effect of lost cost recovery to program funding as well as potential contracting and/or staffing issues for more infrequent collections. More infrequent collections also could create non-response issues if respondent staff are less familiar with EDR requirements simply by not having to complete the response annually. Although reminder letters would continue to be used, non-response issues and/or incomplete submissions could lead to a greater need for enforcement actions. Respondent staff experience and familiarity will completed EDR electronic forms will necessarily decrease with more infrequent information collections. To the extent that erosion of respondent knowledge affects the completeness of responses, data quality may be adversely affected and audits due to non-compliance may become more likely. These risks to data quality and completeness would increase with the most infrequent collection period of once every five years.

Alternative 3, Options 1 -4

The options to eliminate EDR information collections under Alternative 3 would also eliminate program management including the need for data processing, data verification, audits in cases of noncompliance, and any enforcement actions that could be necessary to ensure compliance with EDR information collection regulations. If the Am 80 EDR were eliminated permit issuance in the Amendment 80 fleet would no longer be connected to proof of annual EDR submission.

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

Table 9 provides a qualitative comparison of the potential effects of the alternatives on industry costs, programmatic costs, data usage and availability, incentives for compliance, and enforceability of EDR program regulations. Direct cost to industry of independent third party audits has been procedurally reduced to zero under the status quo, as audits will now only occur in cases of noncompliance.

Alternative 2, Option 1 eliminates the authorization for third party audits and, thus, removes the incentive for accurate and timely reporting. Given that the agencies have acted to minimize the burden of independent third party audits, Alternative 2, Option 1 may have negative implications for net national benefits dependent on whether misreporting becomes a problem absent the compliance incentive of independent third party audits.

Alternative 2, Option 2 would eliminate blind formatting of data and the Council guideline of use of the five record confidentiality standard, both of which have effectively diminished the usefulness and practical application of the data for analysis of fishery management issues. In addition, by authorizing NMFS personnel to access identifiers in EDR records, eliminating blind formatting would facilitate more effective oversight of EDR data verification processes by NMFS staff, particularly if independent third party audits are reduced or eliminated as under Alternative 2, Option 1, and would improve effective enforcement of EDR submission requirements. Thus, Alternative 2, Option 2 provides net benefits to the nation in terms of improving data use and application in the fishery management and Council process as well as improving the potential for effective enforcement.

Alternative 2, Option 3, would change the frequency one or more EDR information collections. Reducing the frequency of information collections is designed to reduce industry cost of EDR compliance as well as potentially reducing some agency implementation costs. Lowered implementation costs could reduce cost recovery fees charged to industry, except with regard to the GOA Trawl EDR that does not contain a cost recovery element. Thus, Alternative 2, Option 3 would provide net benefits to the nation in terms of reduced costs but may create management and enforcement complications due to non-response and/or non-compliance issues affecting data quality, the need for heightened agency management, and the potential for greater need for enforcement actions and data quality audits.

Alternative 3, Options 1-4 would eliminate individual EDRs. Thus, Alternative 3, Options 1-4 would provide net benefits to the nation in terms of reduced costs in that all industry burden and cost recovery fees for any individual EDR chosen for elimination would be removed. Similarly, all agency implementation costs associated with an eliminated EDR would be removed. These cost reductions appear to have positive implications for net national benefits. However, the elimination of the EDRs associated with LAPPs makes the data unavailable for the Council and NMFS to create the annual reports on economic performance and for MSA required LAPP review (e.g. Crab EDR, A80 EDR). Data would not be available to the Council to assist in establishing baseline conditions to develop future catch share programs (e.g., GOA Trawl EDR) or to provide data on fleet operations valuable to analysts when considering future Council actions on salmon bycatch avoidance in the Bering Sea (e.g., A91 EDR). Data collected in the EDRs has been used to develop analyses of Council actions, to monitor bycatch avoidance, and has demonstrated practical value in the fisheries management and the Council process. Thus, elimination of an individual EDRs, while lowering costs, comes with the tradeoff of the loss of the time series data that EDR provides and will eliminate that source of information and its use in future Council actions.

Table Comparison of Effects of the Alternatives

	Alternative 1	Alternative 2 Option 1	Alternative 2 Option 2	Alternative 2 Option 2	Alternative 2 Option 3	Alternative 3 Options 1-4
Action	Status quo. No action.	Remove independent third party data audit authorizations	Eliminate blind formatting of EDR data)	Apply existing data handling standards to EDR data	Change Frequency of EDR data collection	Eliminate the individual EDRs
Impacts						
Industry cost-direct cost	Procedurally reduced to ease burden	Potential for audit related cost burden eliminated	No change	No change	Reduced depending on frequency chosen	Reduced
Industry costs-Cost recovery	Procedurally reduced/taxpayer burden remains	Reduced by elimination of programmatic costs	No change	No change	Potentially reduced	Reduced and Taxpayer burden possibly reduced
Programmatic cost (NMFS/PSMFC)	Procedurally reduced	Reduced	No change	No change	Potentially reduced	Reduced
Data use and availability	No change	No change	Improved	Improved	Data less complete	Data eliminated
Compliance incentive	Maintained	Eliminated	No change	No change	No Change	Compliance need eliminated
Enforceability	Procedurally reduced audits/enforceability inhibited by blind formatting	Potentially reduced	Improved, especially if audits are eliminated or amended	No change	No Change	Enforcement need eliminated

5. Magnuson-Stevens Act and FMP Considerations

5.1 Magnuson-Stevens Act National Standards

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

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

This action is administrative in nature and would not directly affect conservation and management measures presently in place to ensure achieving optimum yield on a continuing basis. This action could potentially eliminate economic burden of compliance with an information collection and/or audit compliance the collection and/or audit are deemed unnecessary. This action could also modify standards to protect confidentiality such that managers and scientists may have greater access to the underlying data which may, in turn, improve the availability of economic information to managers considering management actions.

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

The potential actions are all amendments to mandatory annual census reporting requirements intended to improve the usability, efficiency, and consistency of the data collection programs and to minimize cost to industry and the Federal government. While these actions would not directly affect conservation and management measures or the scientific information they are based the actions may improve the usefulness and practical application of the economic data collected for analysis of fishery management issues. Thus, this action may enhance collection of the best scientific information in terms of economic data collections. This action may also could potentially eliminate an information collection that was created to collect data that would allow interested stakeholders to better understand the impacts of a proposed trawl bycatch management program and other programs on participants in the fishery, especially harvesting crew members and processing workers. Consideration of the past proposal has been postponed indefinitely calling into question whether this information collection is necessary. This action could eliminate the individual EDRs, which would also eliminate the time series data collection which may have negative implications for maintaining collection of the best scientific information.

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

This action is administrative in nature and would not directly affect how individual fish stocks are managed. The annual total Allowable Catches (TACs) are set for GOA and BSAI groundfish stocks according to the annual harvest specification process that is outlined in the GOA and BSAI Groundfish FMPs. NMFS conducts the stock assessments for these species, based on the most recent catch and survey information. The assessment author(s), along with the GOA and BSAI Groundfish Plan Team and the Science and Statistical Committee, recommend overfishing levels and allowable biological catches. The Council sets annual harvest specifications for these groundfish stocks based on those recommendations (<http://www.afsc.noaa.gov/refm/stocks/assessments.htm>). Crab stocks are similarly assessed and the Crab Plan Team and Science and Statistical Committee, recommend overfishing levels and allowable biological catches. The State of Alaska manages the Chinook salmon stocks that originate

within the state, with NMFS being responsible for Chinook PSC in the groundfish fishery. The proposed action is consistent with management of individual stocks as a unit or interrelated stocks as a unit or in close coordination.

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

The potential actions are all amendments to mandatory annual census reporting requirements intended to improve the usability, efficiency, and consistency of the data collection programs and to minimize cost to industry and the Federal government. Nothing in the alternatives considers residency as a criterion for the Council's decision. Residents of various states, including Alaska and states of the Pacific Northwest, participate in the major sectors affected by the proposed action.

With regard to allocation of fishing privileges, the purpose of the EDR requirements are to gather information to improve the Council's ability to analyze the economic effects of the catch share or rationalization programs, to understand the economic performance of participants in these programs, and to help estimate impacts of future issues, problems, or proposed revisions to the programs covered by the EDRs. Improvements to the EDR programs would improve the Council's ability to analyze proposed allocation program or revisions to existing programs.

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

This action does not affect the utilization of the fishery resources or involve allocations of any fishery resources. The action alternatives proposes easing economic burden associated with collecting these data, applying consistent confidentiality standards to improve data handling efficiency, and eliminating economic burden on participants where the Council may determine that the data is not necessary to manage and monitor the fishery in question.

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

None of the alternatives would be expected to affect changes in the availability of fishery resources in the Alaska EEZ each year. Any such changes would be addressed through the annual allocation process, which is not affected by the alternatives.

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

The objective of this action is to minimize the cost of compliance with information collection programs and to standardize the handling of confidential data.

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

This action is administrative in nature and seeks to minimize the economic burden of compliance with information collection programs and standardize the handling of confidential data. The purpose of the EDR requirements are to gather information to improve the Council's ability to analyze the economic effects of the catch share or rationalization programs, to understand the economic performance of participants in these programs, and to help estimate impacts of future issues, problems, or proposed revisions to the programs covered by the EDRs. Improvements to the EDR programs would improve the Council's ability to analyze the impacts of proposed management measures on fishing communities. Specifically, components and options to remove blind formatting and to reduce the data aggregation standards may allow the presentation of more detailed EDR information to the Council and public. Removing requirements for the individual EDR programs would discontinue the collection of data that has contributed to economic and social analyses and would discontinue annual reporting (Crab EDR, A80 EDR) and the collection of unique crew level employment data (Crab EDR, A80 EDR, GOA Trawl EDR).

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

The proposed action does not directly address regulations governing bycatch management. The management of bycatch and/or prohibited species catch is conducted via the annual TAC specifications process and bycatch management measures in effect in 50 CFR part 679.

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

The proposed action would not change safety requirements for fishing vessels and would not impact safety of human life at sea.

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

Section 303(a)(9) of the Magnuson-Stevens Act requires that a fishery impact statement be prepared for each FMP or FMP amendment. A fishery impact statement is required to assess, specify, and analyze the likely effects, if any, including the cumulative conservation, economic, and social impacts, of the conservation and management measures on, and possible mitigation measures for (a) participants in the fisheries and fishing communities affected by the plan amendment; (b) participants in the fisheries conducted in adjacent areas under the authority of another Council; and (c) the safety of human life at sea, including whether and to what extent such measures may affect the safety of participants in the fishery.

The RIR prepared for this proposed action constitutes the fishery impact statement. The likely effects of the proposed action are analyzed and described throughout the RIR. The proposed action will not have adverse effects on participants in the fisheries and fishing communities. There are no effects of the proposed action on safety of human life at sea. Based on the information reported in this section, there is no need to update the Fishery Impact Statement included in the FMP.

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

5.3 Council's Ecosystem Vision Statement

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

Ecosystem Approach for the North Pacific Fishery Management Council

Value Statement

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

Vision Statement

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

Implementation Strategy

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

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

In considering this action, the Council is being consistent with its ecosystem vision statement. This action does not affect the tools available for appropriate and conservative monitoring of fishing activities, especially species caught incidentally and discarded at sea. This action does not contradict the Council's intention to provide best data possible for scientists, managers, and the public in order to ensure sustainable fisheries for managed species and their effects on associated ecosystem components.

6. Preparers and Persons Consulted

Preparer

Scott A. Miller (NMFS Alaska Region, Sustainable Fisheries Division AKR-SFD).

Contributors

Brian Garber-Yonts (Alaska Fisheries Science Center (AFSC), Economics and Social Science Research Program (ESSRP))

Stephen Kasperski (AFSC ESSRP)

7. Literature cited

- Alaska Fisheries Science Center (AFSC). 2019. Draft Social and Economic Data Gap Analysis v.2. Unpublished manuscript under development for the NPFMC Social Sciences Planning Team May 2019 meeting.
- Federal Committee on Statistical Methodology (FCSM). 2001. Statistical policy working paper No. 3: Measuring and Reporting Sources of Error in Surveys. U.S. Dept. of Commerce, Office of Federal Statistical Policy and Standards. 31 p.
- FCSM. 2005. Statistical policy working paper No. 2: Report on statistical disclosure and disclosure-avoidance techniques. U.S. Dept. of Commerce, Office of Federal Statistical Policy and Standards. 69 p.
- Fissel, B., R. Felthoven, S. Kasperski, and C. O'Donnell. 2015. "Decomposing Productivity and Efficiency Changes in the Alaska Head and Gut Factory Trawl Fleet". *Marine Policy*, 62: 337-346.
- Garber-Yonts, B., and J. Lee. 2021. Stock Assessment and Fishery Evaluation Report for King and Tanner Crab Fisheries of the Bering Sea and Aleutian Islands Regions: Economic Status of the BSAI Crab Fisheries, 2017.
- Garber-Yonts, B., Kasperski, S., Bibb, S., and Miller, S. 2019. Discussion Paper: Alaska Region Economic Data Reporting Programs. Presented by NMFS to the North Pacific Fishery Management Council at its April 2019 meeting. Agenda Item D5. <https://meetings.npfmc.org/CommentReview/DownloadFile?p=1f542e61-0dfc-465e-92eb-f7f00ab70edc.pdf&fileName=D5%20EDR%20Discussion%20Paper.pdf>
- Holland, D., Wyeth, P., 1993. SAM multipliers: Their decomposition, interpretation, and relationship to input-output multipliers. In: Research Bulletin XB 1027. College of Agricultural and Home Economics Research Center, Washington State University.
https://scholar.google.com/scholar_lookup?title=SAM%20multipliers%3A%20Their%20decomposition%2C%20interpretation%2C%20and%20relationship%20to%20input-output%20multipliers&author=D.%20Holland&publication_year=1993
- King, B., 1985. What is a SAM? In: Pyatt, G., Round, J. (Eds.), *Social Accounting Matrix*. World Bank.
https://scholar.google.com/scholar_lookup?title=What%20is%20a%20SAM%3F&author=B.%20King&publication_year=1985
- Miller, R.E., Blair, P.D., 1985. *Input-Output Analysis: Foundations and Extensions*. Prentice Hall Inc., Englewood Cliffs, NJ. https://scholar.google.com/scholar_lookup?title=Input-Output%20Analysis%3A%20Foundations%20and%20Extensions&author=R.E.%20Miller&publication_year=1985
- NMFS, 2004b. "Regulatory Impact Review/ Initial Regulatory Flexibility Analysis Voluntary Three-Pie Cooperative Program for the Bering Sea and Aleutian Islands Crab Fisheries." North Pacific Fishery Management Council/National Marine Fisheries Service. August, 2004. 638 pp plus appendices.
https://alaskafisheries.noaa.gov/sites/default/files/analyses/Appendix1_RIR.pdf; An extract of EIS and RIR/IRFA sections addressing the economic data collection element of the Crab Rationalization program, with Appendix 1.3-6 (missing from the above URL) are available from AFSC at https://www.afsc.noaa.gov/REFM/Socioeconomics/PDFs/EIS_EDRsections.pdf.
- NMFS 2014. Final Environmental Impact Statement for Steller Sea Lion Protection Measures for Groundfish Fisheries in the Bering Sea and Aleutian Islands Management Area. National Marine Fisheries Service, Juneau Alaska. <https://repository.library.noaa.gov/view/noaa/4905>
- NMFS, 2018a. "Review of Regulations under E.O. 13771 and E.O. 13777." A discussion paper presented by NMFS to the North Pacific Fishery Management Council at its April 2018 meeting. Agenda Item D2. 15 pp.
- NMFS, 2018b. "Economic Status Report Summary: BSAI Crab Fisheries, 2017." <https://www.npfmc.org/wp-content/PDFdocuments/resources/SAFE/CrabSAFE/2017CrabEconomicSAFEappendix.pdf>
- NMFS, 2019. Regulatory Impact Review. "Halibut Deck Sorting Monitoring Requirements for Trawl Catcher/Processors Operating in Non-Pollock Groundfish Fisheries off Alaska." NOAA Fisheries, Alaska

- Regional Office, Juneau Alaska. <https://www.fisheries.noaa.gov/resource/document/regulatory-impact-review-proposed-regulatory-amendment-halibut-deck-sorting>
- NMFS, 2021. Stock Assessment and Fishery Evaluation Report for the Groundfish Fisheries of the Gulf of Alaska and Bering Sea/Aleutian Islands Area: Economic Status of the Groundfish Fisheries Off Alaska, 2017. <https://meetings.npfmc.org/CommentReview/DownloadFile?p=6ce97991-4a9e-4182-998f-bf3c0bbb38f5.pdf&fileName=D4%20Groundfish%20Economic%20SAFE.pdf>
- NPFMC, 2014. “Regulatory Impact Review/Initial Regulatory Flexibility Analysis for the Trawl Economic Data Report: Fishery Management Plan for Groundfish of the Gulf of Alaska”. Prepared by the North Pacific Fishery Management Council and the National Marine Fisheries Service. February 25, 2014. 49 pp plus appendices.
- NPFMC, 2017. “Ten-Year Program Review for the Crab Rationalization Management Program in the Bering Sea/ Aleutian Islands” January 2017 https://www.npfmc.org/wp-content/PDFdocuments/catch_shares/Crab/Crab10yrReview_Final2017.pdfNPFMC,
- NPFMC, 2020. Economic Data Reporting Stakeholder Workshop report, November 2020, <https://meetings.npfmc.org/CommentReview/DownloadFile?p=63d9cc73-80b1-4d80-8f5c-c277cf63d41e.pdf&fileName=D6%20EDR%20stakeholder%20workshop%20report%20Nov%202020.pdf>
- NPFMC, 2020. Economic Data Reporting Stakeholder Workshop report, August 2020. <https://meetings.npfmc.org/CommentReview/DownloadFile?p=3ae5f37e-cf90-4ce8-a246-8bed2be7191a.pdf&fileName=D6%20EDR%20stakeholder%20workshop%20report%20Aug%202020.pdf>
- NPFMC, 2021. Environmental Assessment/ Regulatory Impact Review for a Proposed Amendment to the Fishery Management Plan for the Bering Sea and Aleutian Islands Groundfish Crab PSC limits in the BSAI groundfish trawl fisheries. February 2021. Anchorage, AK. Accessed from: <https://meetings.npfmc.org/CommentReview/DownloadFile?p=89a2a312-6cec-4b86-8b86-e0484c8a0583.pdf&fileName=C4%20Crab%20PSC%20Analysis.pdf>
- Northern Economics, Inc. 2014. Five-Year Review of the Effects of Amendment 80. Prepared for North Pacific Fishery Management Council. October, 2014. <https://alaskafisheries.noaa.gov/sites/default/files/amd805yrreview1014.pdf>
- Punt, A., Siddeek, M., Garber-Yonts, B., Dalton, M., Rugolo, L., Stram, D., Turnock, B., Zeng, J. 2012. "Evaluating the impact of buffers to account for scientific uncertainty when setting TACs: application to red king crab in Bristol Bay, Alaska", *ICES J. of Mar. Sci.*, 69: 624-634. <https://academic.oup.com/icesjms/article/69/4/624/636410>
- Punt A., Foy, R., Dalton, M., Long, C., Swiney, K. 2016. Effects of long-term exposure to ocean acidification conditions on future southern Tanner crab (*Chionoecetes bairdi*) fisheries management. *ICES J. Mar. Sci.*, 73: 849-864
- Reimer, M. and A.C. Haynie. 2018. “Mechanisms Matter for Evaluating the Economic Impacts of Marine Reserves,” *Journal of Environmental Economics and Management*, 88: 427-426.
- Reimer, M., Abbott, J., Wilen, J. 2014. Unraveling the Multiple Margins of Rent Generation from Individual Transferable Quotas. *Land Economics* (90)3: 538-559. <http://le.uwpress.org/content/90/3/538.short>
- Seung, C. K., and S. Miller. 2018. Regional economic analysis for North Pacific fisheries. U.S. Dep. Commerce., NOAA Tech. Memo. NMFS-AFSC-380, 86 p.
- Seung, C. K., Waters, E.C., and Barbeaux S.J. 2021. Community-level Economic Impacts of a change in TAC for Alaska Fisheries: A Multi-regional Framework Assessment. *Ecological Economics*, 186 (2021) 107072.
- Thunberg, E., J. Walden, J. Agar, R. Felthoven, A. Harley, S. Kasperski, J. Lee, T. Lee, A. Mamula, J. Stephen, and A. Strelcheck. 2015. “Measuring Changes in Multi-Factor Productivity in U.S. Catch Share Fisheries”. *Marine Policy*, 62: 294-301.

- Walden, J., J. Agar, R. Felthoven, A. Harley, S. Kasperski, J. Lee, T. Lee A. Mamula, , J. Stephen, A. Strelcheck, and E. Thunberg. 2014. Productivity Change in U.S. Catch Shares Fisheries. U.S. Dept. of Commer., NOAA Technical Memorandum NMFS-F/SPO-146, p.137.
- Waters, E., Seung, C., Hartley, M., Dalton, M., (2014) Measuring the multiregional economic contribution of an Alaska fishing fleet with linkages to international markets. *Marine Policy*, 50 A, 238-248.
<https://www.sciencedirect.com/science/article/pii/S0308597X14001778>