

**NOAA
FISHERIES**

Discussion Paper: Economic Data Reports

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Outline: EDR Discussion

1. Executive Summary
2. Introduction
3. Scientific and Analytical Standards
4. Description and History of Economic Data Collection
5. EDR Program Operations, Costs, and Limitations
6. EDR Program Assessment and Recommendations

2. Introduction

- The Council discussed the EDRs in several meetings during 2018, with public testimony noting that the EDR programs had been in effect for some time and questioning whether the EDR requirements for some fisheries had met the Council's purpose and need.
- At the April 2018 meeting, the Council reviewed a discussion paper prepared by NMFS reviewing its regulations, and included a reference to the Council's prior discussion of the EDR requirements, and the Council requested that NMFS prepare a discussion paper on this topic.

2. Introduction

- NPFMC motion 4/9/18:

The Council requests that NMFS prepare a discussion paper that describes the Economic Data Report requirements for all programs, explains how the data are used, and provides estimates of the costs of complying with the EDR requirements. The Council can then use the information in the discussion paper to determine if revisions to EDR requirements are needed and the priority and process for analysis of proposed revisions.

2. Introduction

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



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2. Introduction
3. Scientific and Analytical Standards
 - 3.1 Requirements and Guidance for Economic Analyses
 - 3.2 Business data collection design and evaluation
 - 3.2.1 Measurement objectives and data applications
 - 3.2.2 Data quality principles and guidance
4. Description and History of Economic Data Collection
5. EDR Program Operations, Costs, and Limitations
6. EDR Program Assessment and Recommendations

3.1 Requirements and Guidance for Economic Analyses

Federal regulatory review

- EO 12866, RIR, NMFS RIR Guidelines
- NEPA
- RFA
- EO 13771

Fishery management policy

- MSA
- National Standards
- BSAI/GOA FMPs

3.1 Requirements and Guidance for Economic Analyses

Crab FMP – 7.2.2. Maximize economic and social benefits to the nation over time.

...profits, income, employment, benefits to consumers, and less tangible or less quantifiable social benefits such as the economic stability of coastal communities. ...

...considering, to the extent that data allow, ...prices, harvesting costs, processing costs, employment, the distribution of benefits among members of the harvesting, processing and consumer communities, management costs, and other factors affecting the ability to maximize the economic and social benefits...

3.1 Requirements and Guidance for Economic Analyses

Why does the Council need economic data?

To achieve MSY...?

To satisfy regulatory review guidelines...?

To publish economic research...?

To manage fisheries for better social and economic outcomes...?

...How?

3.1 Requirements and Guidance for Economic Analyses

Contrast economic objectives and analyses to MSY & NS1 framework

- Reference points/proxies/tiers
- Depth/breadth of expertise
- Data quality and utility of better data
- Incentives for transparency

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Section 3.2: Data collection design and evaluation

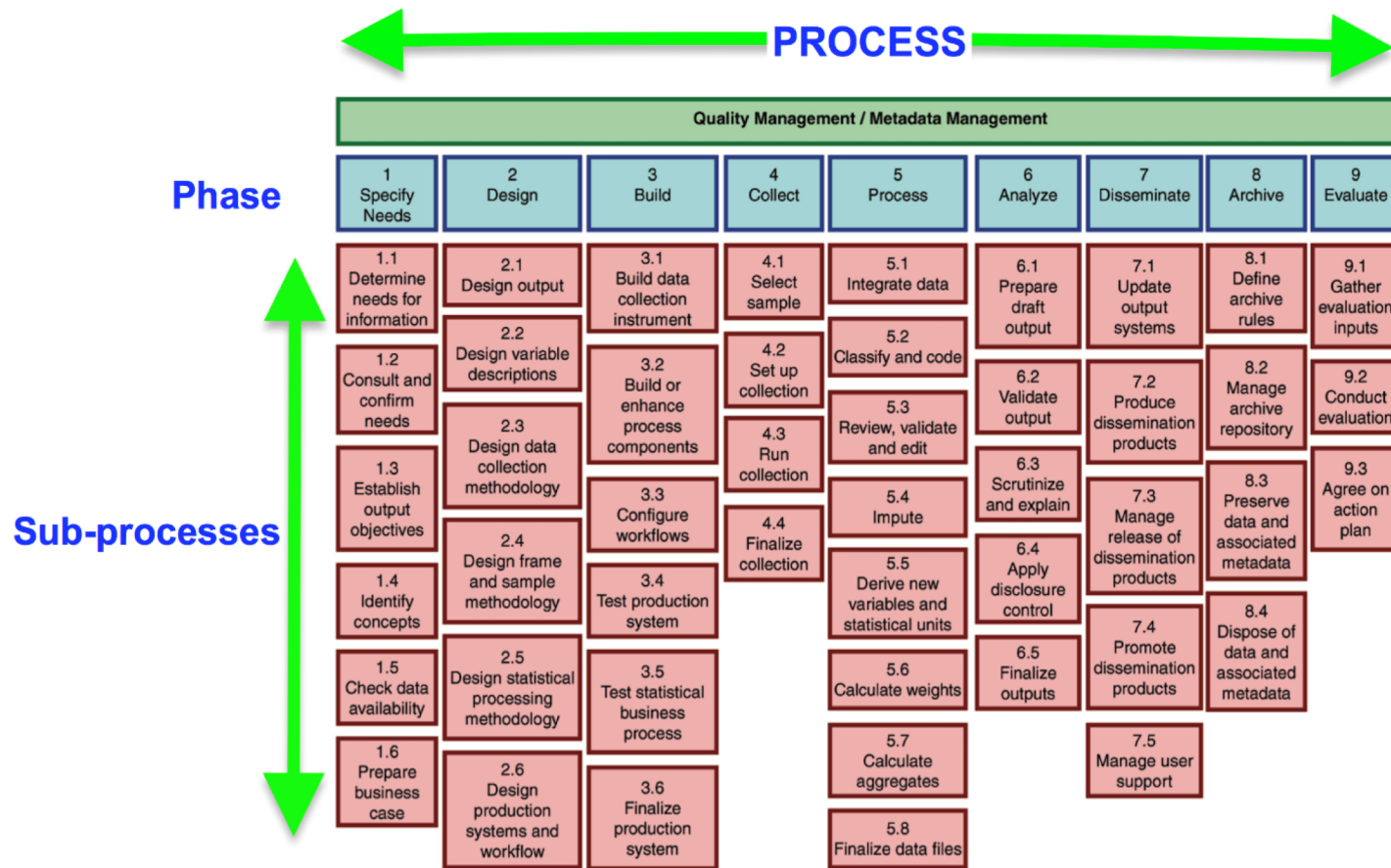


Figure 1: Generic statistical business process model (Vale 2009; Snijkers, et al, 2015)

3.2 Measurement objectives and data applications

- EDR data are collected for distinct purpose compared to most other data used by Council analytical staff
- EDR objectives and methods have changed over time without consideration of system effects and practical utility
- Applications of EDR data are infrequent by design and unique to EDR program
- EDRs are not administrative data, but have many features of R&R requirements that confuse expectations

3.2.2. Data quality principles and guidance

- PRA guidelines for statistical surveys
- NS 2 Requirements
- Accuracy \neq Data Quality
- Data quality is only definable in context of intended data use

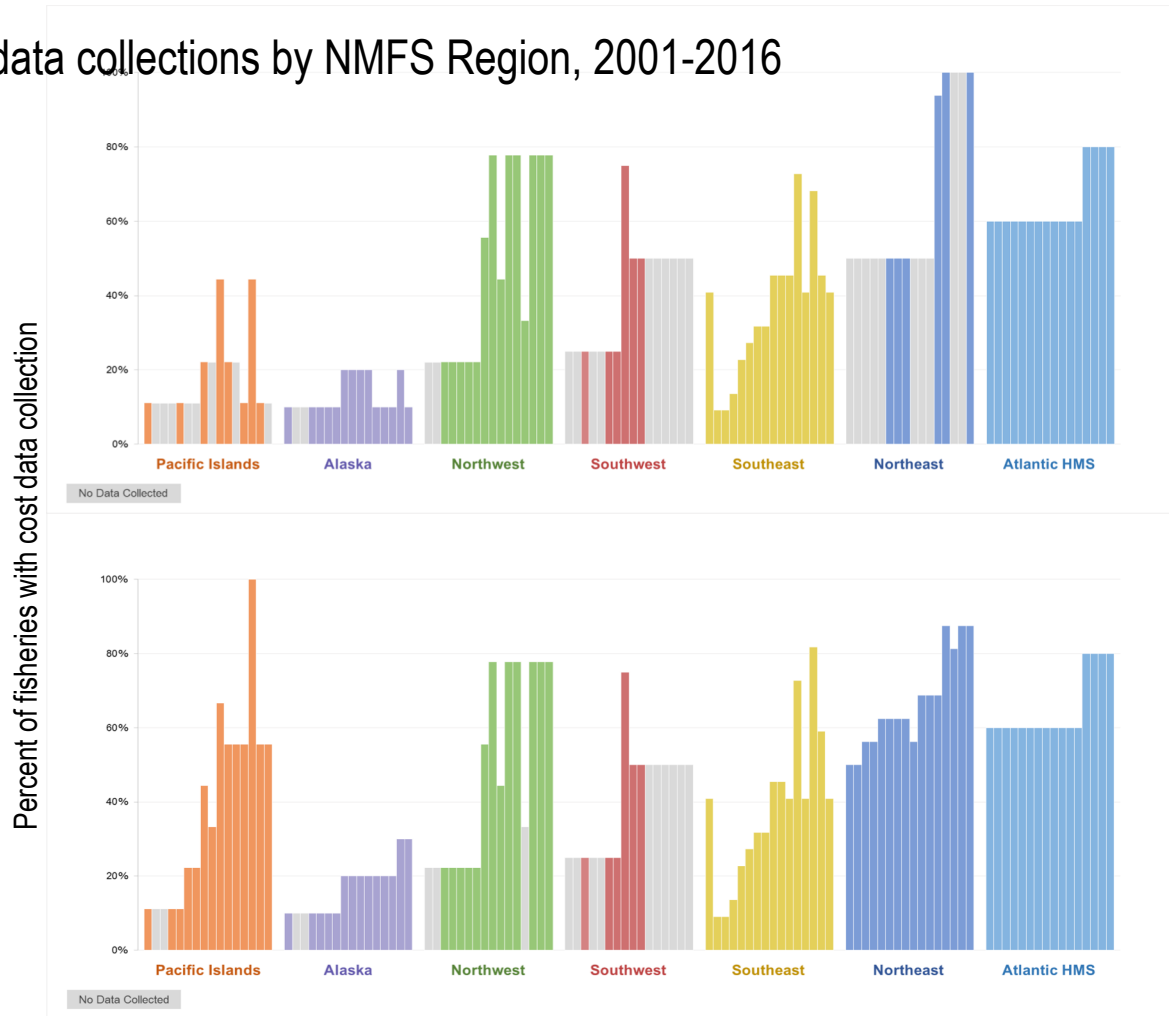
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1. Executive Summary
2. Introduction
3. Scientific and Analytical Standards
4. Description and History of Economic Data Collection
 - 4.1 Overview of national fisheries economic data collections
 - 4.2 Review of North Pacific economic data collections
 - 4.3 Historical overview of EDR development process
5. EDR Program Operations, Costs, and Limitations
6. EDR Program Assessment and Recommendations

4.1 National fisheries economic data collections

Fishing vessel cost data collections by NMFS Region, 2001-2016

Variable costs



Fixed costs

Source: <https://www.st.nmfs.noaa.gov/Assets/economics/images/collectionUSCommercialFisheriesCosts.jpg>

4.2 Overview of current EDR program framework

- Purpose and needs
- Framework of EDR system
- Content of forms and reporting requirements
 - Crab EDR
 - A80 EDR
 - A91 EDR
 - GOA Trawl EDR

Summary overview of EDR variables by EDR form

| EDR Variables, by general group | BSAI crab | | | GOA trawl / Amendment 80 | | | Amendment 91 | |
|--|---|--|--|---|---|--|--------------------|-----------------------------|
| | 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) | | | | | | | | |
| 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 Crab and Annual | | Employee count, average positions, and average hours per employee-day; Annual | Employee count, by month; Groundfish fisheries | | |
| 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 | | | |

4.3 Historical overview – EDR Program Development

- Comparison of Crab EDR and A80 EDR development and design process
 - Crab EDR - original design
 - A80 design
 - Crab revision
- Northwest Groundfish Trawl Rationalization EDC Program
- A91 objectives and design process
- GOA Trawl objectives and design process

4.3 Historical overview – Lessons Learned

- General state of confusion about roles and purpose of EDR data
- Framework of standardized social and economic indicators needed for consistent, coherent EDR data system and utility to managers
- Full scope of data process should be in place, tested, and functioning to standards before data collection is
- “Variables” should not be the objective
- Need continuity and clear roles for technical and industry input

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 - 5.1 Summary of EDR program operations
 - 5.2 Limitations of EDR data
 - 5.3 Applications of EDR data in analyses
6. EDR Program Assessment and Recommendations

5.1.1 EDR data collection to-date

| 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 |
| 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 |
| Total To-date | 1805 | 72 | 300 | 208 | 205 | 31 | 0 | 437 | 748 | 3806 |

5.1.1.2 Data verification/audit administration

- Primary validation
- Secondary validation
- Audit review
 - Audit protocol development – 2005-2012
 - Random audit selection and data analysis
 - Redesign - 2015

5.2 Limitations of EDR data

5.2.1 Data quality limitations in current EDR data collection

- Questionnaire design issues
- EDR design issues

5.2.1.5 Usability

- Data management
- Fragmentation



5.1.1.3 Program expenditures and cost recovery

- This section focuses on the cost recovery amounts
- Three of the four EDRs have some portion funded through cost recovery.
 - Partial A91 (inshore only)
 - No cost recovery for GOA Trawl

5.1.1.3 Program expenditures and cost recovery

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 | \$62,859 | \$496,622 | \$ 73,221 | \$569,843 |
| 2017 | \$ 180,168 | \$ 91,482 | \$69,369 | \$341,019 | \$ 91,879 | \$432,898 |
| 2018 | | \$ 92,462 | \$40,631 | | \$ 61,765 | |

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.

5.1.1.3 Program expenditures and cost recovery

- EDR-related costs average less than 0.25% of fishery ex-vessel value per year

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 | | 0.08% | 0.04% | 0.13% |

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.

5.1.1.4 Estimated costs to industry of preparing and submitting EDRs

- Under the PRA, NMFS is required to obtain approval for new information collections
- For each of the four EDRs, NMFS provides:
 - The estimated number of respondents for each form
 - The estimated hours it takes to submit the required information,
 - The estimated cost per hour for preparing and submitting each response.

5.1.1.4 Estimated costs to industry of preparing and submitting EDRs

Table 9 Estimated Number of Respondents and Costs to Prepare and Submit Alaska Economic Data Reports.

| Name of EDR Program or Submission | Number of respondents per year | Hours per response | Estimated Cost Per Submission and in Total | | |
|---|--------------------------------|--------------------|--|---------------------|---------------------------------|
| | | | Cost per hour for respondent | Cost per respondent | Total labor costs of submission |
| Crab EDR | | | | | |
| Catcher vessels | 70 – full EDR | 20 | \$165 ^{1/} | \$3,300 | \$231,000 |
| | 1 – cert. only ^{2/} | 1 | \$165 | \$165 | \$165 |
| Catcher/processors | 2 – full EDR | 20 | \$165 | \$3,300 | \$6,600 |
| Processors | 18 – full EDR | 16 | \$165 | \$2,640 | \$47,520 |
| | 4 – cert. only | 1 | \$165 | \$165 | \$660 |
| Verification/audit | 16 CVs | 8 | \$165 | \$1,320 | \$21,120 |
| | 0 CPs | | | | \$0 |
| | 4 processors | | | | \$5,280 |
| Total for Collection | 95 | | | | \$312,345 |
| Amendment 80 and GOA Trawl Catcher/Processors | | | | | |
| Annual EDR | 21 – full EDR | 22 | \$37 ^{2/} | \$814 | \$17,094 |
| | 6 – cert. only | 1 | \$37 | \$37 | \$222 |
| Verification/audit | 8 | 5 | \$37 | \$185 | \$1,480 |
| Total for Collection | 27 | | | | \$18,796 |
| Gulf of Alaska Trawl EDR for Trawl Catcher Vessels and Shoreside Processors Taking Deliveries from Trawl CVs | | | | | |
| Catcher vessels | 67 – full EDR | 15 | \$37 | \$555 | \$37,185 |
| | 34 – cert. only | 1 | \$37 | \$37 | \$1,258 |
| Processors | 13 – full EDR | 15 | \$37 | \$555 | \$7,215 |
| Verification/audit | 10 CVs | 4 | \$37 | \$148 | \$1,480 |
| | 5 processors | 5 | \$37 | \$185 | \$925 |
| Total for Collection | 114 | | | | \$48,063 |
| BS Chinook Salmon EDR | | | | | |
| Annual Compensated Transfer Report | 0 – transfer rpt | 40 | \$75 ^{4/} | \$3,000 | \$0 |
| | 96 – cert. only | 1 | \$75 | \$75 | \$7,200 |
| | 0 – verification/audit | 4 | \$75 | \$300 | \$0 |
| Vessel Fuel Survey | 61 | 4 | \$75 | \$300 | \$18,300 |
| Vessel Master Survey | 116 | 4 | \$75 | \$300 | \$34,800 |
| Total for Collection | | | | | \$60,300 |
| TOTAL for all EDRs | | | | | \$439,504 |

5.1.1.4 Estimated costs to industry of preparing and submitting EDRs

- Estimated cost of submitter burden per year
 - Crab EDR: \$312,345
 - A80 EDR: \$18,976
 - GOA Trawl EDR: \$48,063
 - A91 EDR: \$60,300

5.1.1.4 Estimated costs to industry of preparing and submitting EDRs

- Estimated hours of submitter burden by form
 - Crab CV and CP: 20 hours
 - Crab processor: 16 hours
 - A80 EDR: 22 hours
 - GOA Trawl CV and processor: 15 hours
 - A91 vessel fuel and vessel master survey: 4 hours

5.3 Applications of EDR data in analyses

- EDR data annual reporting in SAFEs
- Council program reviews
- Use of data in analyses
- Analyst feedback

5.3.1 EDR Data Annual Reporting

- The Groundfish Economic SAFE includes an annual summary of the A80 EDR
 - Allows the calculation of net operating returns (operating profit) and nearly a complete financial income statement
- The Crab Economic SAFE provides an annual summary of Crab EDR data
 - Allows the calculation of revenue residuals (revenue minus some operating costs) with no fixed costs

5.3.2 Council program reviews

- 5-and 10-year Crab Ratz. 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.
- The 2017 Central GOA Rockfish Program included an SIA that made extensive use of EDR data by developing cross-walk tables for catcher vessel ownership address community and community of residence of crew on those vessels.
- The Amendment 80 program 5-year review provides an overview of the EDR data collected and uses the data to summarize expenses and revenues fleet wide.

5.3.3 Use of EDR Data in Analyses

- EDR data have been used in several regulatory action analyses:
 - Analyzing crew employment in the 2014 Final SSL EIS,
 - RIR of allowing Halibut Deck sorting, and
 - Utilized in projects related to groundfish and crab stock assessments, particularly through bioeconomic models.
- EDR data have also been used in several journal articles and/or technical memos that evaluate:
 - Impacts on crew employment and remuneration,
 - Fishery productivity and efficiency changes, and
 - Analyses of the economic contribution of Alaska fishing fleets to different regional economies, including Alaska.

5.3.3 Use of EDR Data in Analyses

- Several recent Council action analyses have used EDR data:
 - The 2016 GOA trawl bycatch management analysis included an SIA that made extensive use of EDR data.
 - EDR data was used in the recently completed analysis C3 BSAI P.cod Trawl,
 - However, in this case inconsistent EDR data coverage across sectors limited the use of EDR data so that consistent information is provided about each sector.

5.3.4 Analyst Feedback

- In cases where EDR data was not used in analyses, where it may have been helpful:
 - Analysts may not have full access to the data or feel that they did not have the familiarity and/or technical skills to access the data without assistance
 - It has been reported by analysts that the technical aspects of using EDR data necessitates advanced planning to obtain assistance with data access and management tasks and the economic analysis skills needed to use the EDR data.
 - Analysts have also indicated in some cases the alternatives to be analyzed in a council action are not always directly informed by the EDR data currently collected.

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 - 6.1 Short(er) term, practical recommendations to:
 - 6.2 Long(er) term, recommendations to improve economic data collection processes

6. Short(er) term, practical recommendations to:

- 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.
 - 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.

6. Long(er) term, recommendations to improve economic data collection processes:

- 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.

Questions?

