

*Science, Service, Stewardship*



# Economic SAFE, 2022 Groundfish & Crab Joint Presentation

Presentation to NPFMC Scientific and Statistical Committee  
April 4, 2023



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Alaska Fisheries Science Center  
Economics and Social Science Research Program

**NOAA  
FISHERIES  
SERVICE**

# Outline of Presentation

- Human Dimensions Data Explorer/Economic SAFE dashboards
- Groundfish Economic SAFE
  - SSC comments/response
  - Overview
  - Key results
- Crab Economic SAFE
  - SSC comments/response
  - Overview
  - New content and revisions
  - Key results
- AFSC/ESSR Annual\* NPFMC Decision Support Document Suite
  - SSC comments/response
  - Economic SAFE reports in context
  - Evolution of Economic SAFE Reports
  - Future Directions



**NOAA  
FISHERIES**

## Contributors

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*Coming soon*

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Anna Abelman

And others...



# AKFIN Human Dimensions Data Explorer

Alaska Fisheries Information Network

Alerts 0 Dashboard Search Help Public

AKFIN Reports Dashboard \ Human Dimensions Data Explorer

About Economic SAFE Fishing Communities Other Resources

Alaska Fisheries Science Center

## Human Dimensions of Fisheries Data Explorer

NOAA FISHERIES

Photo: NOAA Fisheries

### About the Human Dimensions Data Explorer

The Human Dimensions Data Explorer provides access to data, data visualizations, and other tools for understanding the economic and sociocultural dimensions of Alaska fisheries. These resources have been developed by, in or in collaboration with, the Alaska Fisheries Science Center Economics and Social Science Research Program (ESSRP), which collects and analyzes economic and sociocultural data to support the conversation and management of Alaska marine resources. ESSRP's research foci include seafood

<https://reports.psmfc.org/akfin/f?p=501:2000>

# AKFIN Human Dimensions Data Explorer

The screenshot shows the AKFIN Human Dimensions Data Explorer website. The header includes the Alaska Fisheries Information Network logo and navigation links for Alerts, Dashboard, Search, Help, and Public. The main navigation bar features links for About, Economic SAFE, Fishing Communities, and Other Resources. The Economic SAFE link is highlighted. The main content area is divided into three sections: a blue sidebar on the left, and two white content boxes on the right. The sidebar contains the title 'Economic Status Reports (SAFE)' and a paragraph describing the reports. The two white boxes each feature a thumbnail image and a title: 'Groundfish Economic SAFE' and 'BSAI Crab Economic SAFE'. Each box also contains a paragraph of text describing the report's content.

## Economic Status Reports (SAFE)

Economic Status Reports are published with the annual **Stock Assessment and Fishery Evaluation (SAFE) Reports** for federally-managed groundfish and crab stocks in the North Pacific. The Economic SAFEs provide social and economic context to fisheries managers to support regulatory decision making and the evaluation of management measures such as catch share programs

### Groundfish Economic SAFE

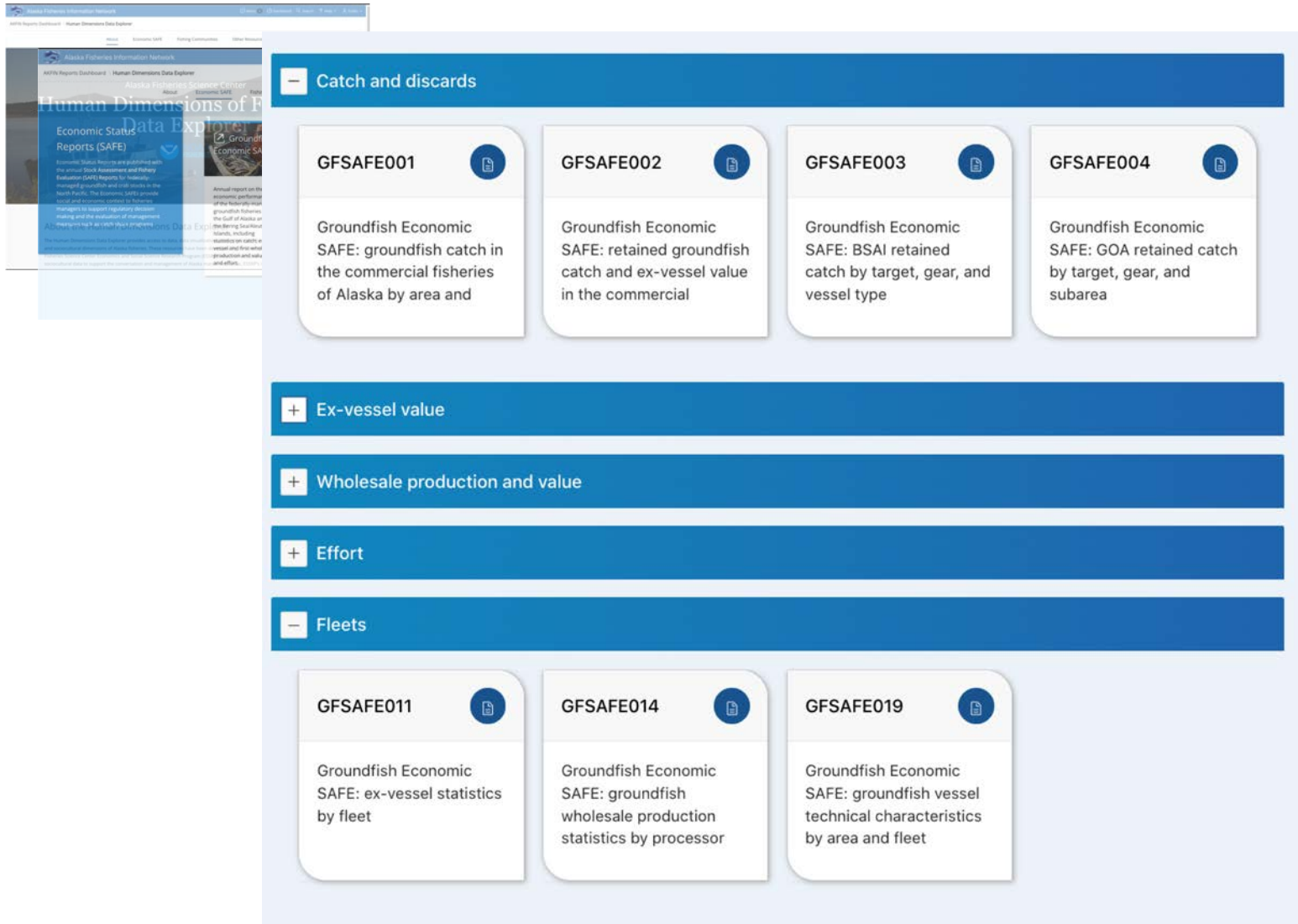
Annual report on the economic performance of the federally-managed groundfish fisheries in the Gulf of Alaska and the Bering Sea/Aleutian Islands, including statistics on catch; ex-vessel and first-wholesale production and value; and effort.

### BSAI Crab Economic SAFE

Annual report on the economic performance of the federally-managed king and Tanner crab fisheries of the Bering Sea and Aleutian Islands, including statistics on production and revenue in the harvesting and processing sectors; labor employment, demographics, and income; and quota holdings, leasing, and sales.





<https://reports.psmfc.org/akfin/f?p=501:2000>

# AKFIN Human Dimensions Data Explorer



The screenshot displays the AKFIN Human Dimensions Data Explorer interface. On the left, a sidebar shows a navigation menu with options like 'Home', 'Reports', 'Data Explorer', and 'Reports (SAFE)'. The main content area is titled 'Human Dimensions Data Explorer' and features a blue header with a minus sign and the text 'Catch and discards'. Below this header, there are four report cards, each with a title, a description, and a document icon. The reports are: GFSAFE001 (Groundfish Economic SAFE: groundfish catch in the commercial fisheries of Alaska by area and), GFSAFE002 (Groundfish Economic SAFE: retained groundfish catch and ex-vessel value in the commercial), GFSAFE003 (Groundfish Economic SAFE: BSAI retained catch by target, gear, and vessel type), and GFSAFE004 (Groundfish Economic SAFE: GOA retained catch by target, gear, and subarea). Below these reports, there are three blue bars with plus signs and the text 'Ex-vessel value', 'Wholesale production and value', and 'Effort'. At the bottom, there is a blue bar with a minus sign and the text 'Fleets'. Below this bar, there are three more report cards: GFSAFE011 (Groundfish Economic SAFE: ex-vessel statistics by fleet), GFSAFE014 (Groundfish Economic SAFE: groundfish wholesale production statistics by processor), and GFSAFE019 (Groundfish Economic SAFE: groundfish vessel technical characteristics by area and fleet).

**— Catch and discards**




- GFSAFE001**  Groundfish Economic SAFE: groundfish catch in the commercial fisheries of Alaska by area and
- GFSAFE002**  Groundfish Economic SAFE: retained groundfish catch and ex-vessel value in the commercial
- GFSAFE003**  Groundfish Economic SAFE: BSAI retained catch by target, gear, and vessel type
- GFSAFE004**  Groundfish Economic SAFE: GOA retained catch by target, gear, and subarea

**+ Ex-vessel value**

**+ Wholesale production and value**

**+ Effort**

**— Fleets**

- GFSAFE011**  Groundfish Economic SAFE: ex-vessel statistics by fleet
- GFSAFE014**  Groundfish Economic SAFE: groundfish wholesale production statistics by processor
- GFSAFE019**  Groundfish Economic SAFE: groundfish vessel technical characteristics by area and fleet

<https://reports.psmfc.org/akfin/f?p=501:2000>

# AKFIN Human Dimensions Data Explorer

The screenshot displays the AKFIN Human Dimensions Data Explorer interface. The main title is "BSAI Crab Economic SAFE". The navigation menu includes "About", "SAFE Highlights", and "Available Data", with "Available Data" being the active section. The data is presented in five cards, each with a unique ID and a description of the data content.

| ID           | Description  |
|--------------|--|
| CRSAFEEXEC01 | BSAI Crab SAFE: harvesting and processing sector output (volume, revenue, price), 1998 - |
| CRSAFEEXEC02 | BSAI Crab SAFE: harvesting and processing sector employment, 2009 - present              |
| CRSAFEEXEC03 | BSAI Crab SAFE: harvest quota lease activity, 2012 - present                             |
| CRSAFE004    | BSAI Crab SAFE: harvest quota share holdings statistics                                  |
| CRSAFE005    | BSAI Crab SAFE: distribution of quota share holdings                                     |

<https://reports.psmfc.org/akfin/f?p=501:2000>



# AKFIN Human Dimensions Data Explorer

AKFIN Reports Dashboard | Human Dimensions Data Explorer | BSAI Crab Economic SAFE

About | **SAFE Highlights** | Available Data

Participation, output, and value | Employment | Quota holdings | Quota leasing

Select charts to display

Chart across fisheries

Select earliest year: 1998 | Select latest year: 2021

Select one or more fisheries to chart

- AIG: ALEUTIAN ISLANDS GOLDEN KING CRAB
- BSS: BERING SEA SNOW CRAB
- BST: BERING SEA TANNER CRAB
- BBR: BRISTOL BAY RED KING CRAB
- PIK: PRIBILOF ISLANDS RED AND BLUE KING CRAB
- SMB: ST. MATTHEW ISLAND BLUE KING CRAB
- WAI: WESTERN ALEUTIAN ISLANDS RED KING CRAB

**Apply selections**

Notes

- Monetary amounts (ex-vessel and first wholesale values and prices) may be plotted using nominal or real (inflation-adjusted) values. Real values are adjusted to 2021 dollars using the Gross Domestic Product (GDP) chain-type price index.

### Crab harvesting and processing participants

Select one metric to plot

**total vessels fishing** | catcher vessels fishing | catcher processors fishing | crab buyers

Count of participants

Year

AIG BBR BSS BST PIK SMB WAI

\* A vessel may operate as both a catcher processor and catcher vessel in one calendar year. As such, the sum of catcher vessels and catcher processors may be greater than the total number of unique vessels fishing.

### Landings and wholesale production weight

Select one metric to plot

**landed weight** | production weight

Select type of value to plot

**pounds** | metric tons

Weight

### Landed weight per vessel

Select one metric to plot

**average landings per vessel** | median landings per vessel

Pounds landed per vessel

Year

# AKFIN Human Dimensions Data Explorer

AKFIN Reports Dashboard \ Human Dimensions Data Explorer \ BSAI Crab Economic SAFE \ CRSAFEEXEC02

## CRSAFEEXEC02 - BSAI Crab SAFE: harvesting and processing sector employment, 2009 - present

This report presents selected statistics from the Economic Status of the Bering Sea and Aleutian Islands King and Tanner Crab Fisheries off Alaska (BSAI Crab Economic SAFE), produced annually by NOAA Fisheries, Alaska Fisheries Science Center Economics and Social Science Research Program.

| Year | Fishery Code | Fishery Name                      | Count of harvesting vessels | Harvest crew positions total | Harvest crew positions vessel mean | Harvest crew positions vessel standard deviation | Harvest crew positions vessel median | Harvest crew pay total nominal |
|------|--------------|-----------------------------------|-----------------------------|------------------------------|------------------------------------|--|--------------------------------------|--------------------------------|
| 2018 | AIG          | ALEUTIAN ISLANDS GOLDEN KING CRAB | 5                           | 37                           | 7.4                                | 1.14   | 7                                    | \$5,227,700                    |
| 2017 | AIG          | ALEUTIAN ISLANDS GOLDEN KING CRAB | 5                           | 36                           | 7.2                                | 1.10   | 7                                    | \$4,664,300                    |
| 2016 | AIG          | ALEUTIAN ISLANDS GOLDEN KING CRAB | 5                           | 36                           | 7.2                                | 0.84   | 7                                    | \$4,482,600                    |
| 2015 | AIG          | ALEUTIAN ISLANDS GOLDEN KING CRAB | 5                           | 35                           | 7                                  | 0.71   | 7                                    | \$3,622,900                    |
| 2014 | AIG          | ALEUTIAN ISLANDS GOLDEN KING CRAB | 5                           | 35                           | 7                                  | 0.71   | 7                                    | \$3,252,900                    |
| 2013 | AIG          | ALEUTIAN ISLANDS GOLDEN KING CRAB | 6                           | 44                           | 7.33                               | 1.03   | 7                                    | \$3,313,600                    |
| 2012 | AIG          | ALEUTIAN ISLANDS GOLDEN KING CRAB | 6                           | 46                           | 7.67                               | 1.21   | 7.5                                  | \$3,418,400                    |
| 2011 | AIG          | ALEUTIAN ISLANDS GOLDEN KING CRAB | 5                           | 36                           | 7.2                                | 1.10   | 7                                    | \$3,847,900                    |
| 2010 | AIG          | ALEUTIAN ISLANDS GOLDEN KING CRAB | 5                           | 35                           | 7                                  | 1.22   | 7                                    | \$3,017,300                    |
| 2009 | AIG          | ALEUTIAN ISLANDS GOLDEN KING CRAB | 5                           | 35                           | 7                                  | 1.22   | 7                                    | \$1,773,700                    |
| 2008 | BSC          | BERING SEA SNOW CRAB              | 20                          | 140                          | 7.00                               | 0.64   | 6                                    | \$20,045,000                   |

Report run time: April 4th, 2023 3:00am  
Data last refreshed: February 9th, 2023 9:56am

Filters applied:  
Year: 2009 - 2021  
Fishery: ALEUTIAN ISLANDS GOLDEN KING CRAB, BERING SEA SNOW CRAB, BERING SEA TANNER CRAB, BRISTOL BAY RED KING CRAB, ST. MATTHEW ISLAND BLUE KING CRAB

Show Footnotes



## **Groundfish Economic SAFE - SSC comments(2022)/response**

- ✓ update market profile with more specific information on COVID impacts
  - Market profiles document is forthcoming; extracts in GF SAFE include covid info
- ❑ concerns over dropping the Amendment 91 EDR data from the report
  - Resources for analyzing skipper survey response data not available

### ***Re: Groundfish Economic SAFE Title-Year Change...***

Title of current document is:

ECONOMIC STATUS OF THE GROUND FISH FISHERIES OFF ALASKA, 2022

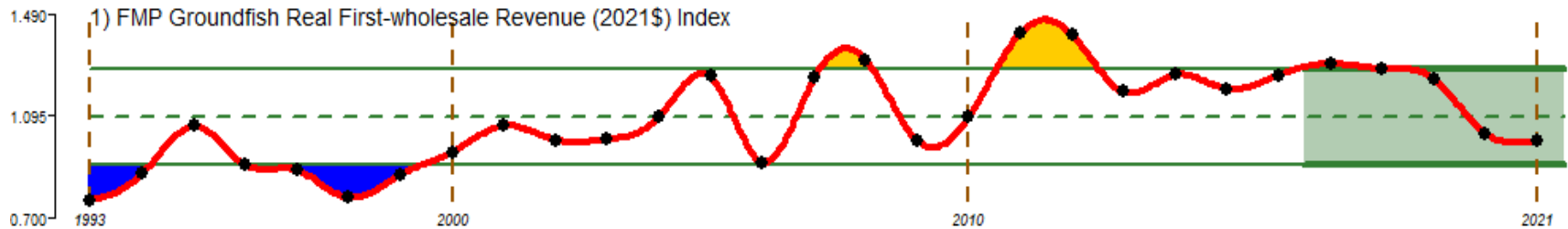
- Previously title-year of GF document was lagged one year behind assessment
- Now consistent with Stock Assessment Report, ESR, Crab Econ SAFE, etc.

# Groundfish Economic SAFE - Overview

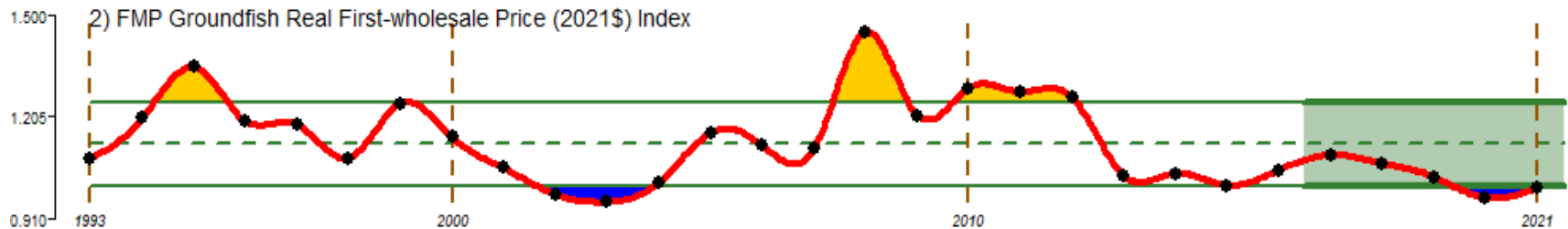
- Executive summary:
  - 2021 economic summary/highlights
  - Report card metrics
- Overview of the economic data tables (static descriptions)
- Core economic data tables
- Economic performance indices
- 2022 in-season harvest and revenue estimates
- Wholesale and ex-vessel price projections
- Market profiles
- Amendment 80 program - economic status summary
- Gulf trawl economic data report summary (**final year**)

# Groundfish Economic SAFE – Report card indices

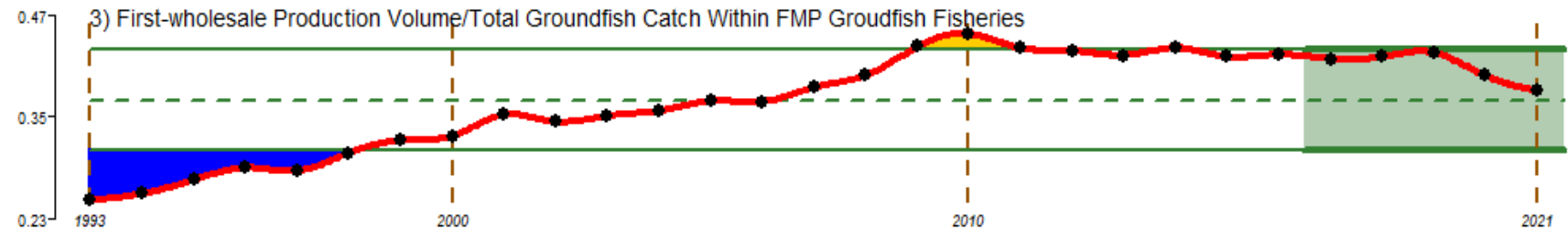
## FMP Groundfish real first-wholesale revenue (2021\$) index



## FMP Groundfish real first-wholesale price (2021\$) index

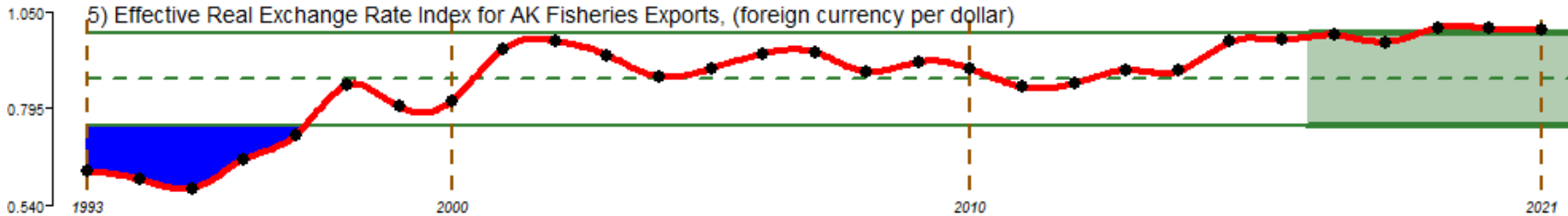


## FMP Groundfish Aggregate Recovery Rate

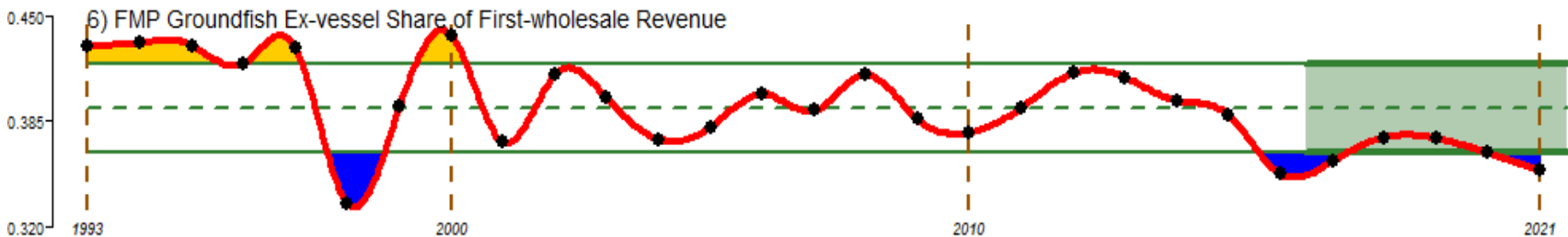


# Groundfish Economic SAFE – Report card indices

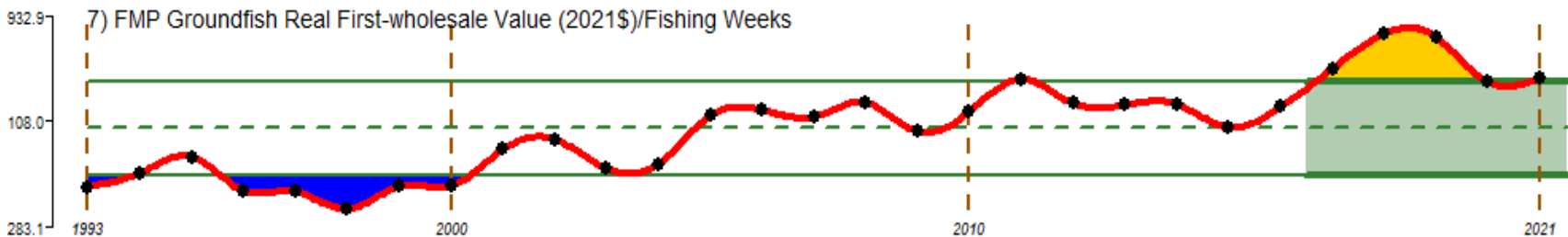
Effective real exchange rate index for AK fisheries exports (foreign currency per dollar)



FMP groundfish ex-vessel share of first-wholesale revenue

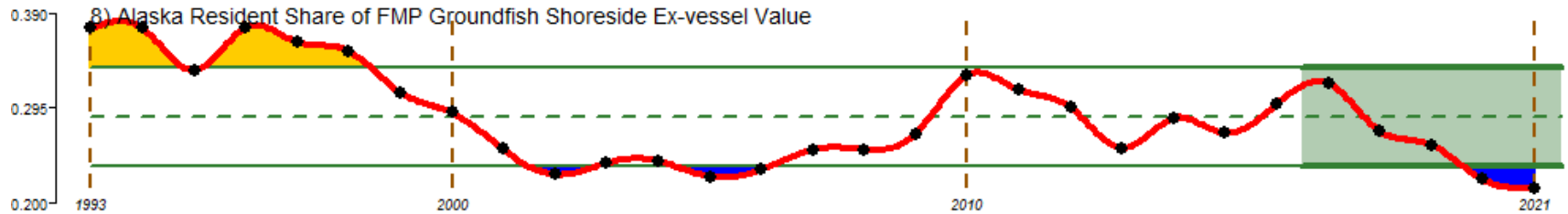


FMP groundfish first-wholesale value (\$2021) per fishing week

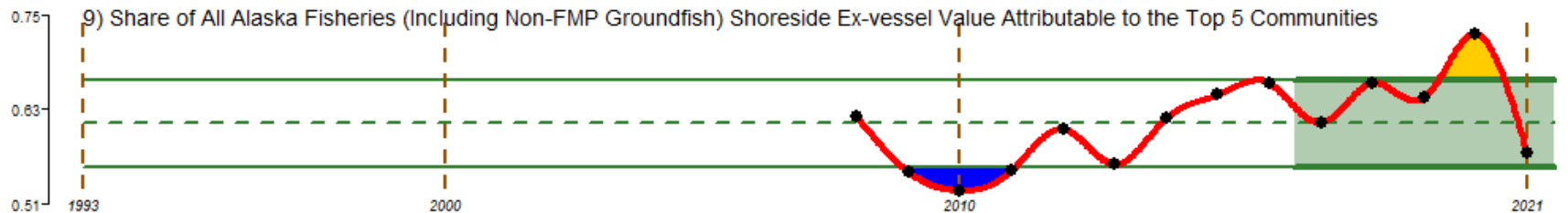


# Groundfish Economic SAFE – Report card indices

## Alaska resident share of FMP groundfish shoreside ex-vessel value



## Share of all Alaska fisheries shoreside ex-vessel value attributable to the top 5 ports



# Alaska's Groundfish Fisheries in 2021

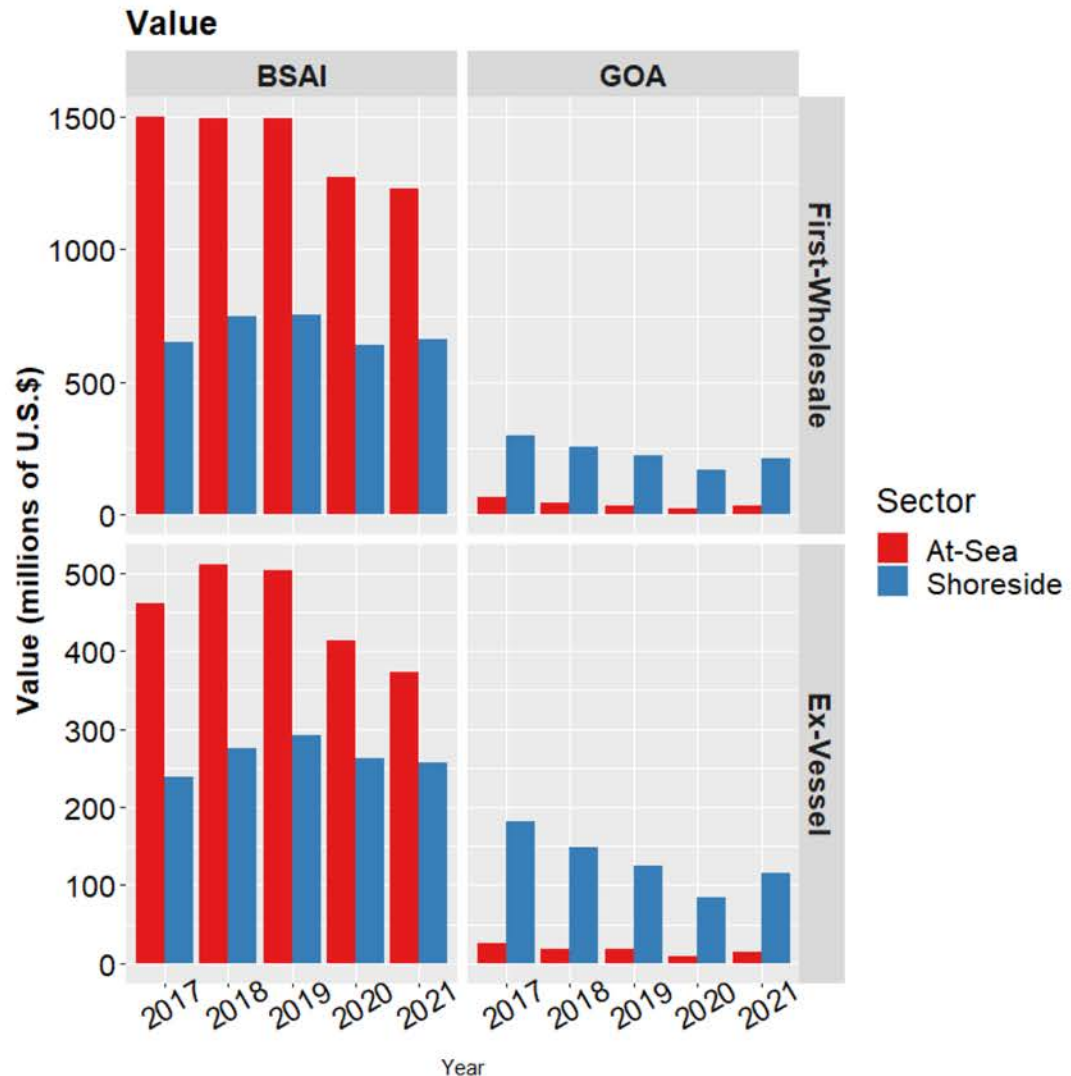
Total catch: 2.01 million t  
(decreased 4%)

Aggregate ex-vessel value decreased in the BSAI and increased in the GOA.

Wholesale value:  
\$2.14 billion (down 2.5%)

Ex-vessel value:  
\$757.2 million (down 5.3%)

Percent change adjusted for inflation.

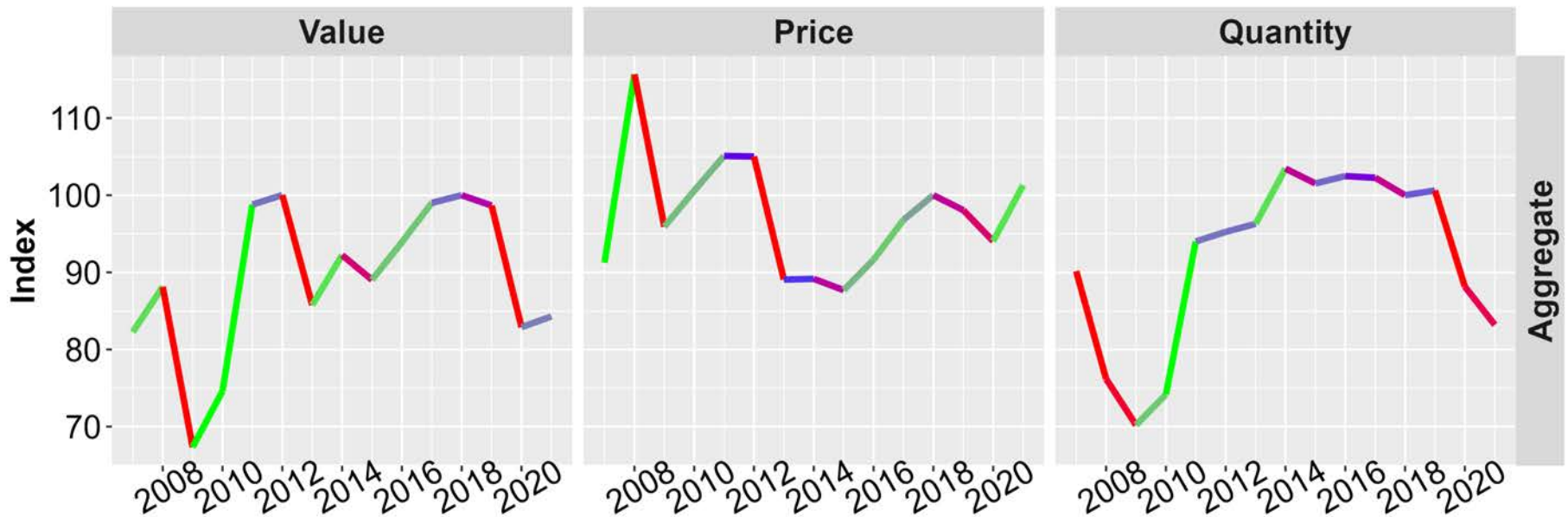


Values in figure nominal (not adjusted for inflation)



# Alaska's Groundfish Fisheries in 2021

## Alaska First Wholesale Economic Indices

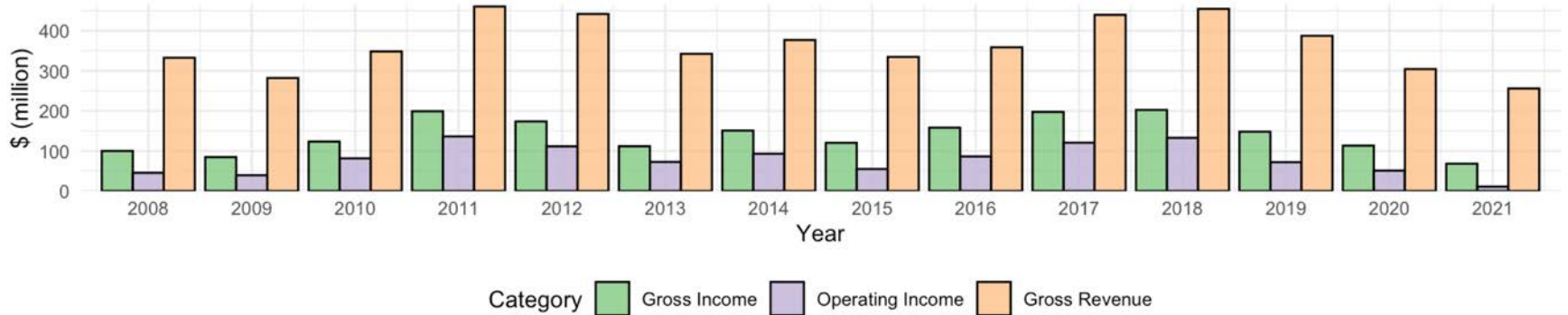


In the aggregate:

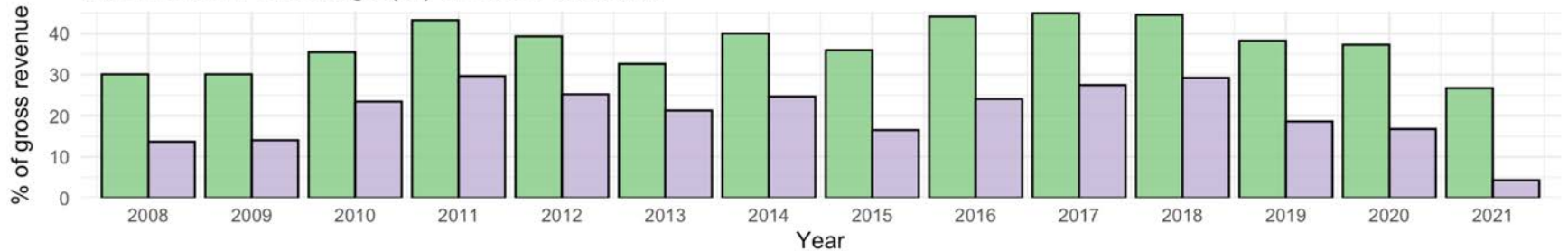
The change in value was the result of increasing prices which offset decreases in volume

# Groundfish Economic SAFE – A80 Gross Profit

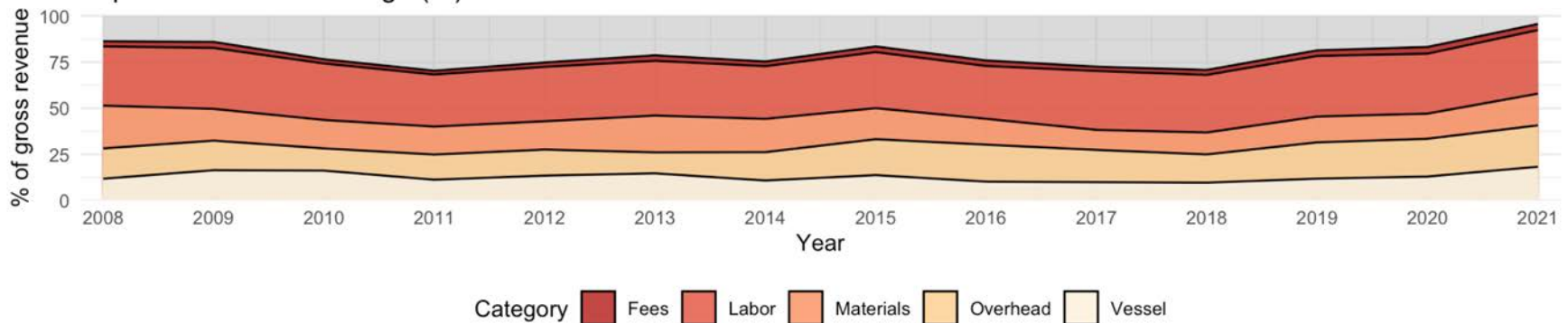
Gross Revenue and Income Residuals



Income as a Percentage (%) of Gross Revenue



Expenses as a Percentage (%) of Gross Revenue



# Crab Economic SAFE - SSC comments (2022)/response

## Report card indices:

- ✓ formal integration into the report
- ✓ re: depicting different data magnitudes pre- and post-rationalization
- ✓ eliminate redundant crew metric
- include metric related to QS decomposition and community participation

## QS decomposition:

- ✓ composition of active versus absentee owners
- ✓ concentration indices
- ✓ flow of QS between entities (e.g., communities) re: who is capturing ownership benefits/how this may be changing over time
- QS ownership by tenure
- vessel ownership decomposition
- develop community-scale results

# 2022 Crab Economic SAFE Overview

Executive summary (contains most new content in 2022 document)

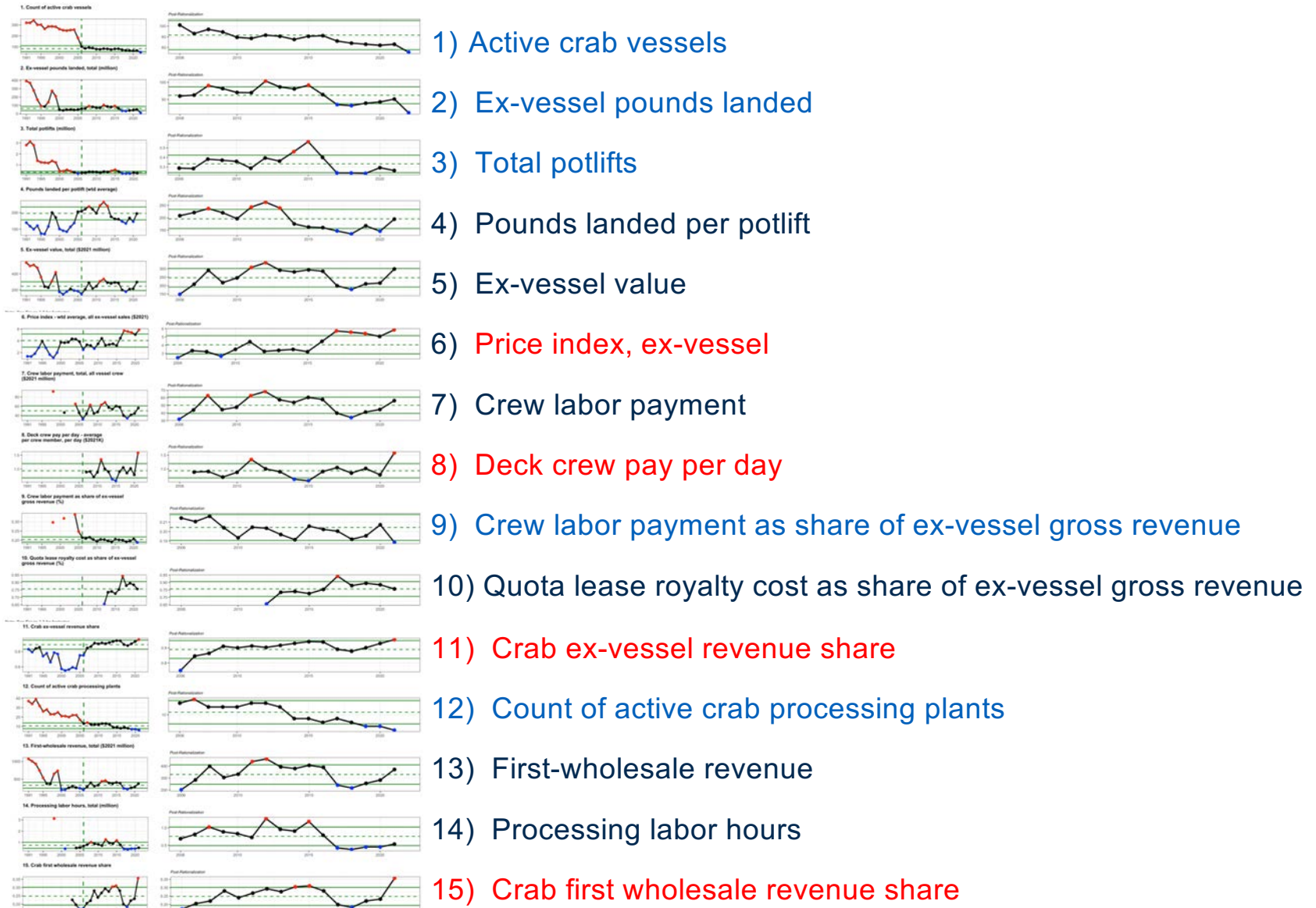
- Fishery overview (revised)
- Report card metrics (new)
- Summary overview of economic status & trends (revised)
- Analysis of Crab QS pools (decomposition)

Introduction (mostly static material)

Economic Status and Trends (streamlined)

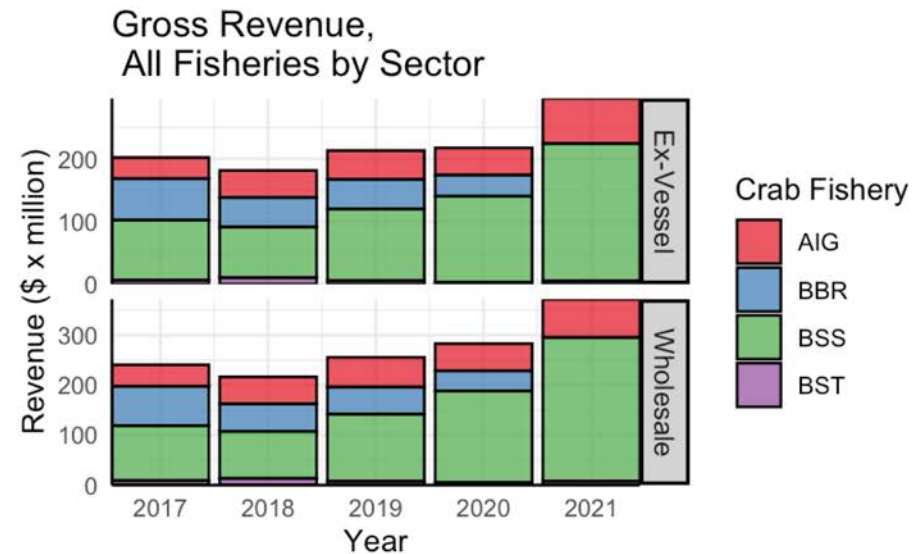
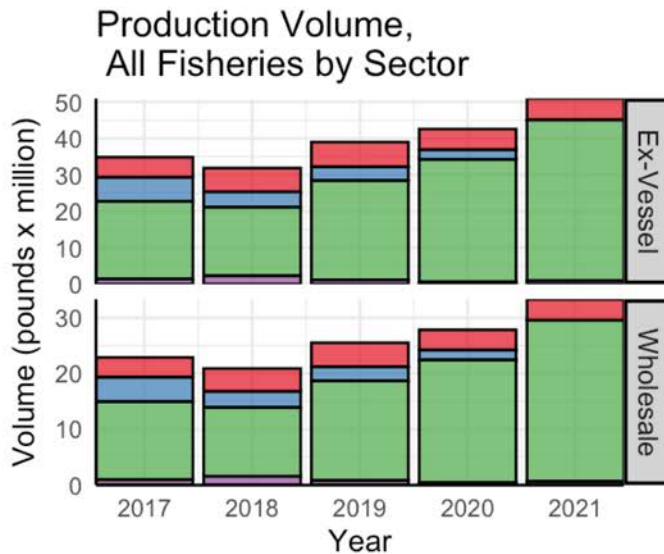
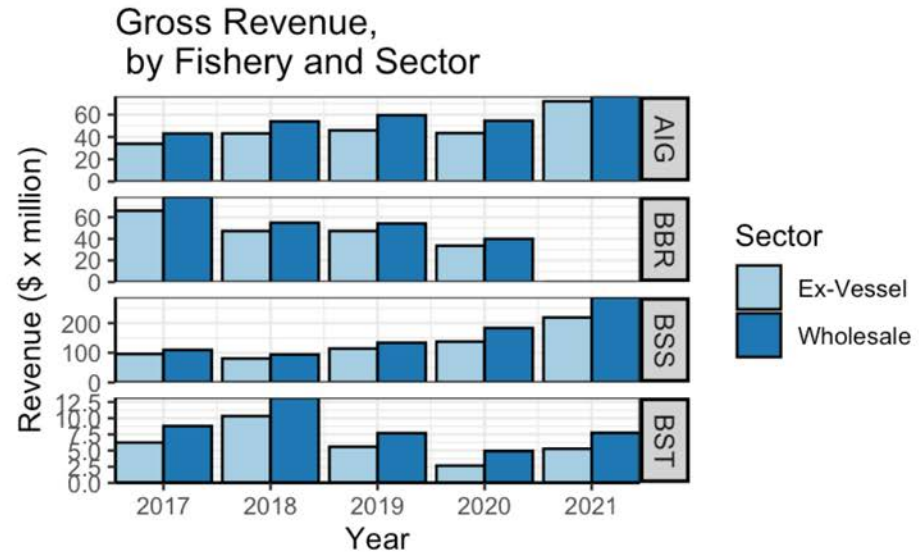
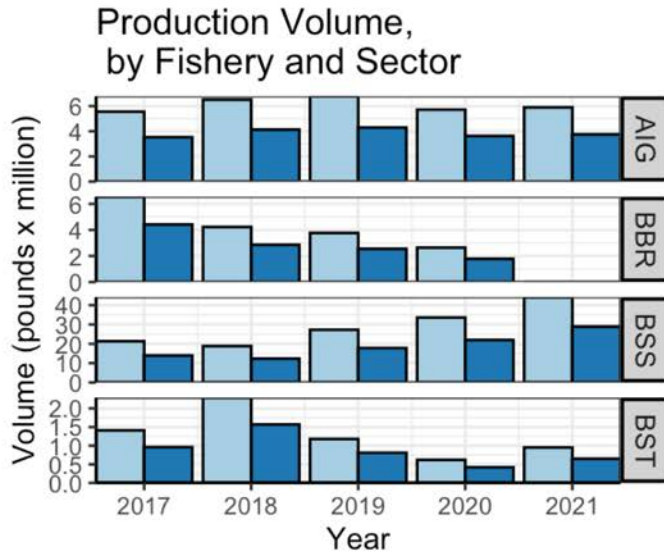
- Economic output – production and value, by sector
  - Vessel and processing labor – income and employment
  - Harvest sector operating costs and financial performance
  - IFQ/CDQ lease market
  - QS market and holdings, and structure of QS pools (decomposition)
  - Fishing capacity and effort
  - International trade – king and snow crab
- Narrative descriptions of status and trends largely removed from chapter

# Crab Economic SAFE - Report Card indices



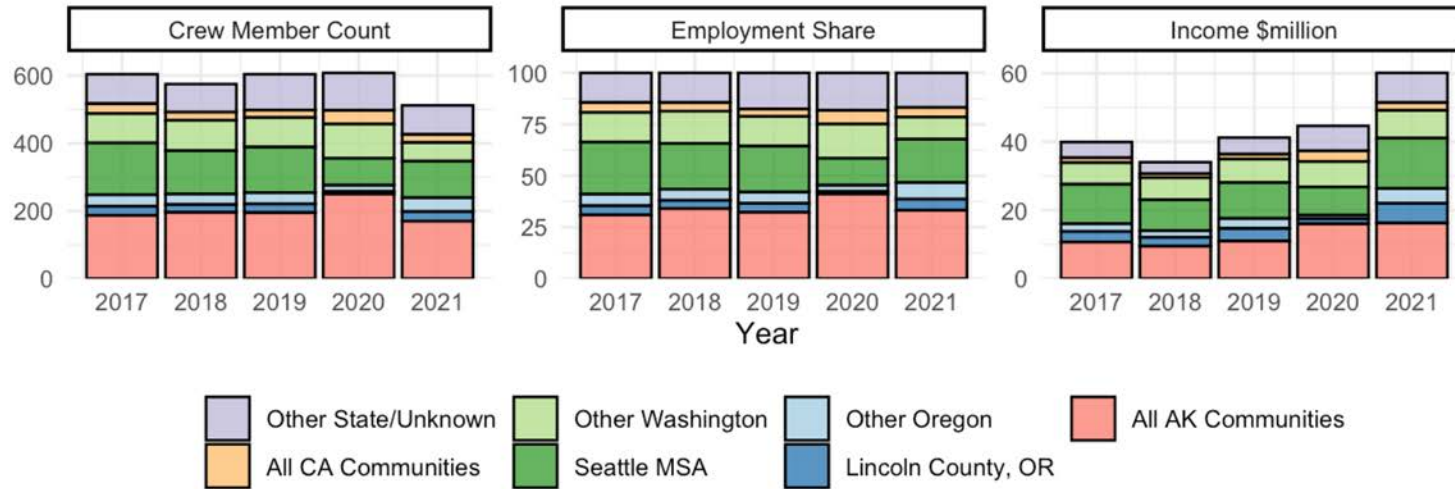
Note: Green vertical line indicates the first full calendar year of implementation of the CR program. Green horizontal lines show the mean (dotted) and 1 standard deviation (solid) for the 2008-2010 reference period. Color of plot labels indicates values within (black), above (red), and below (blue) one standard deviation of the mean.

# Crab Economic SAFE – Summary: Economic Output

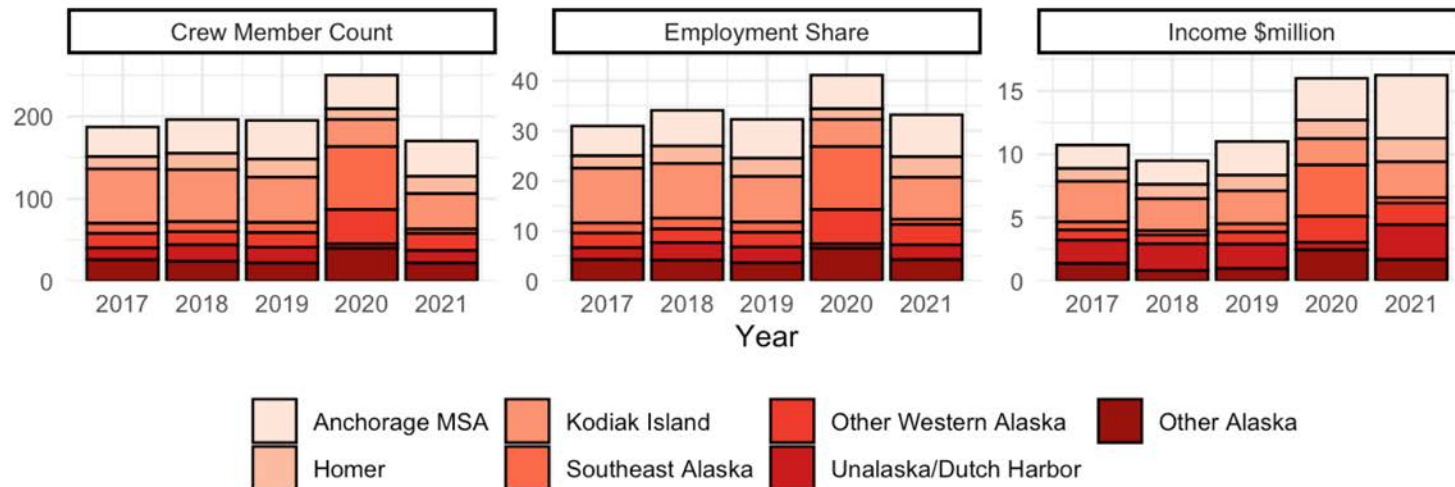


# Crab Economic SAFE – Summary: crew employment

## All Communities

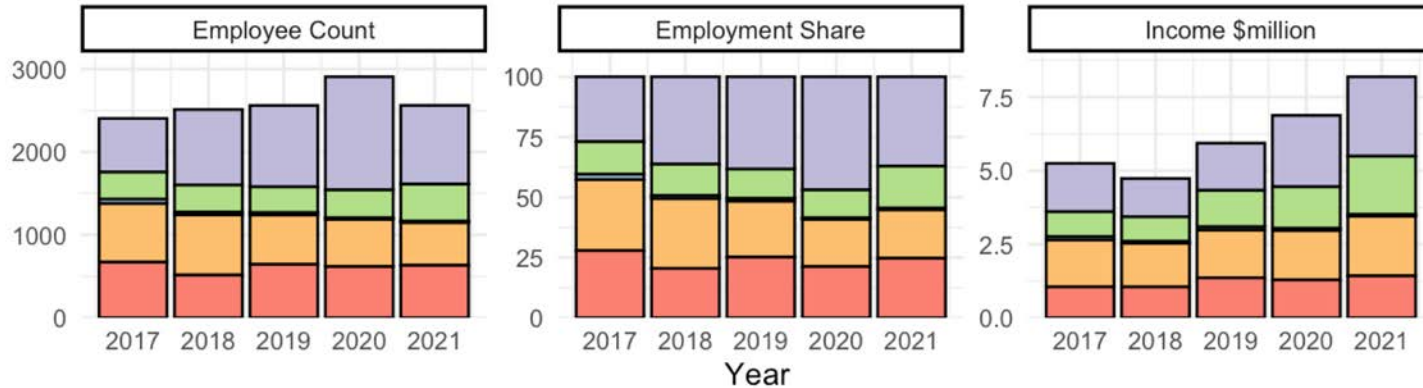


## Alaska Communities

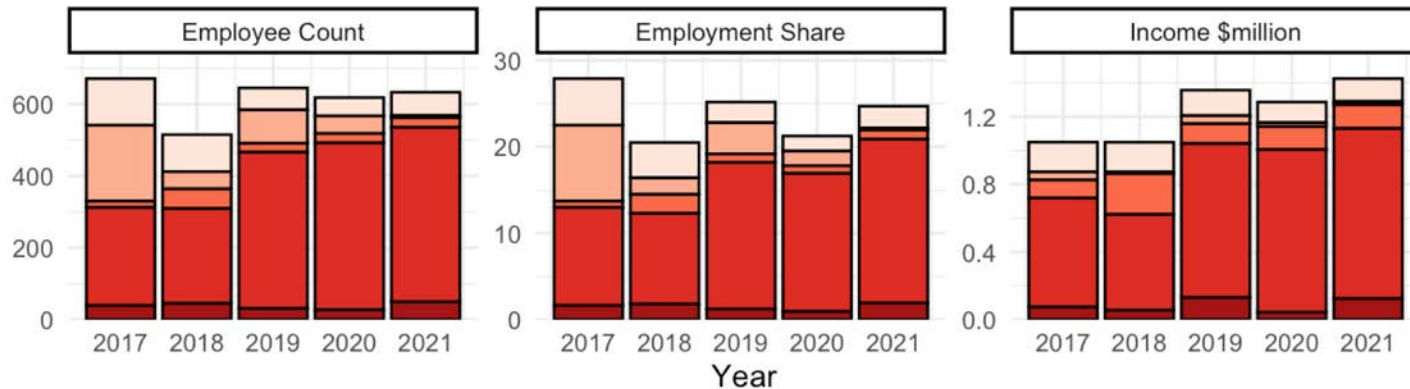


# Crab Economic SAFE – Summary: processing employment

## All Communities

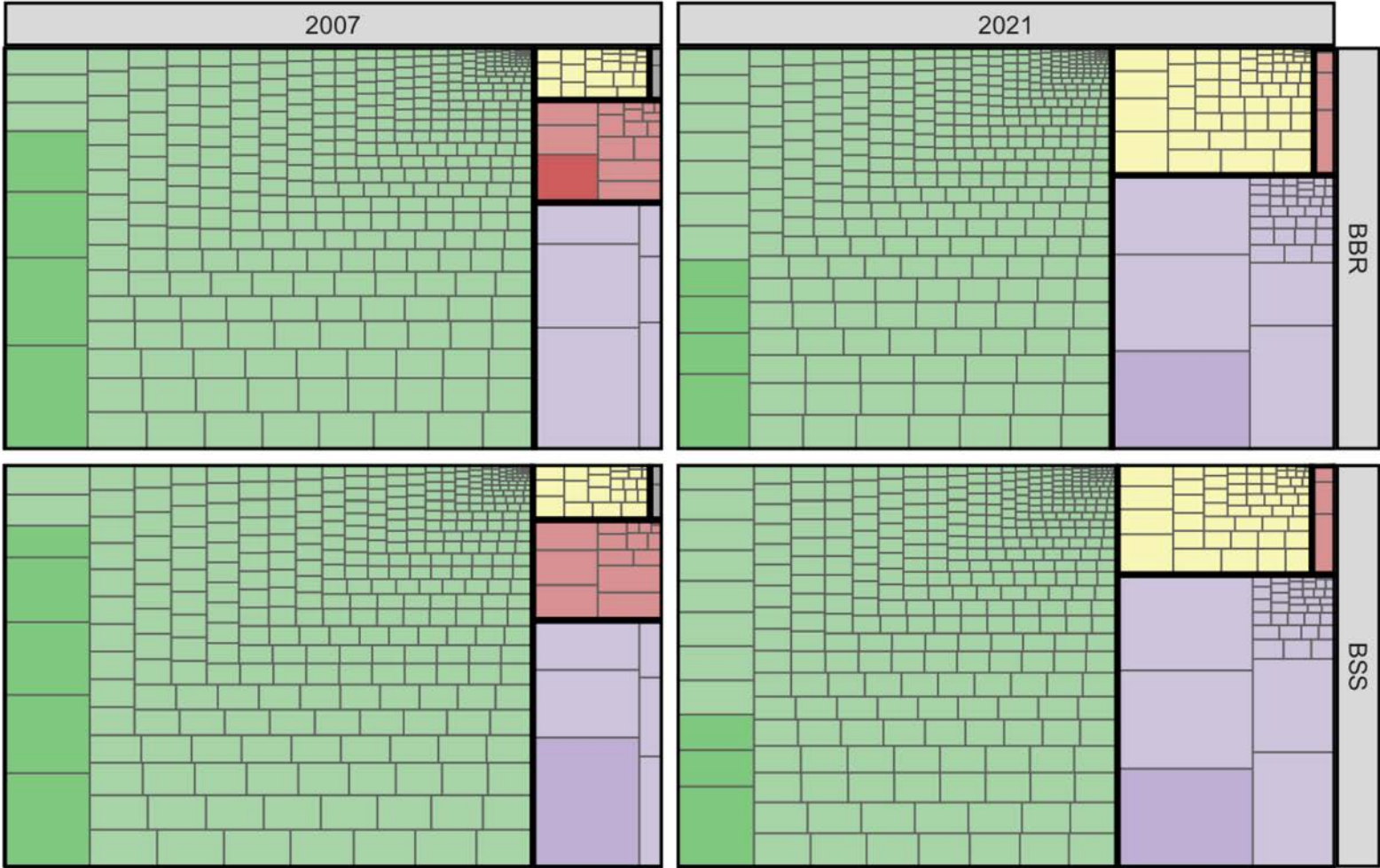


## Alaska Communities



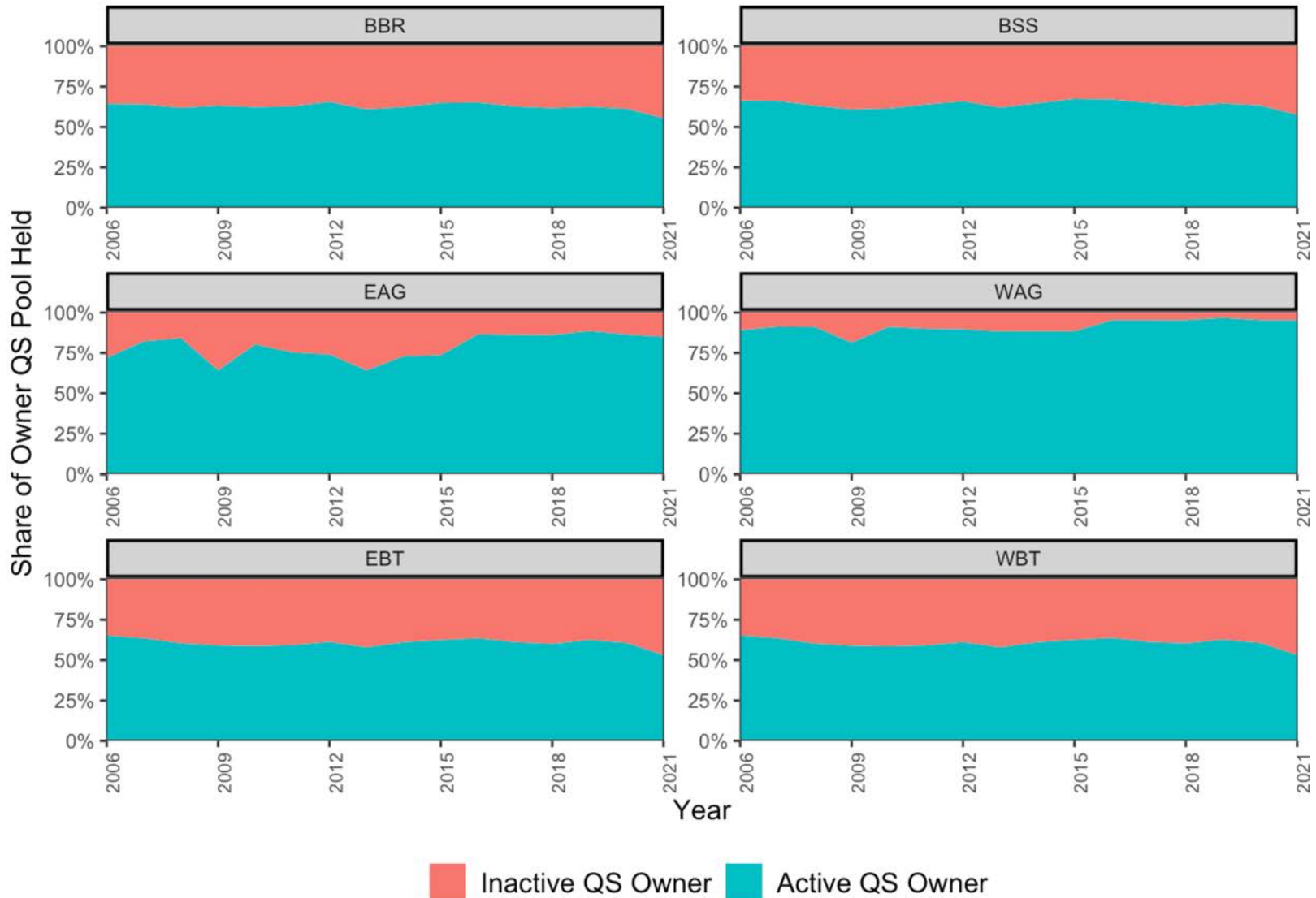


# Crab Economic SAFE – QS Pool Decomposition

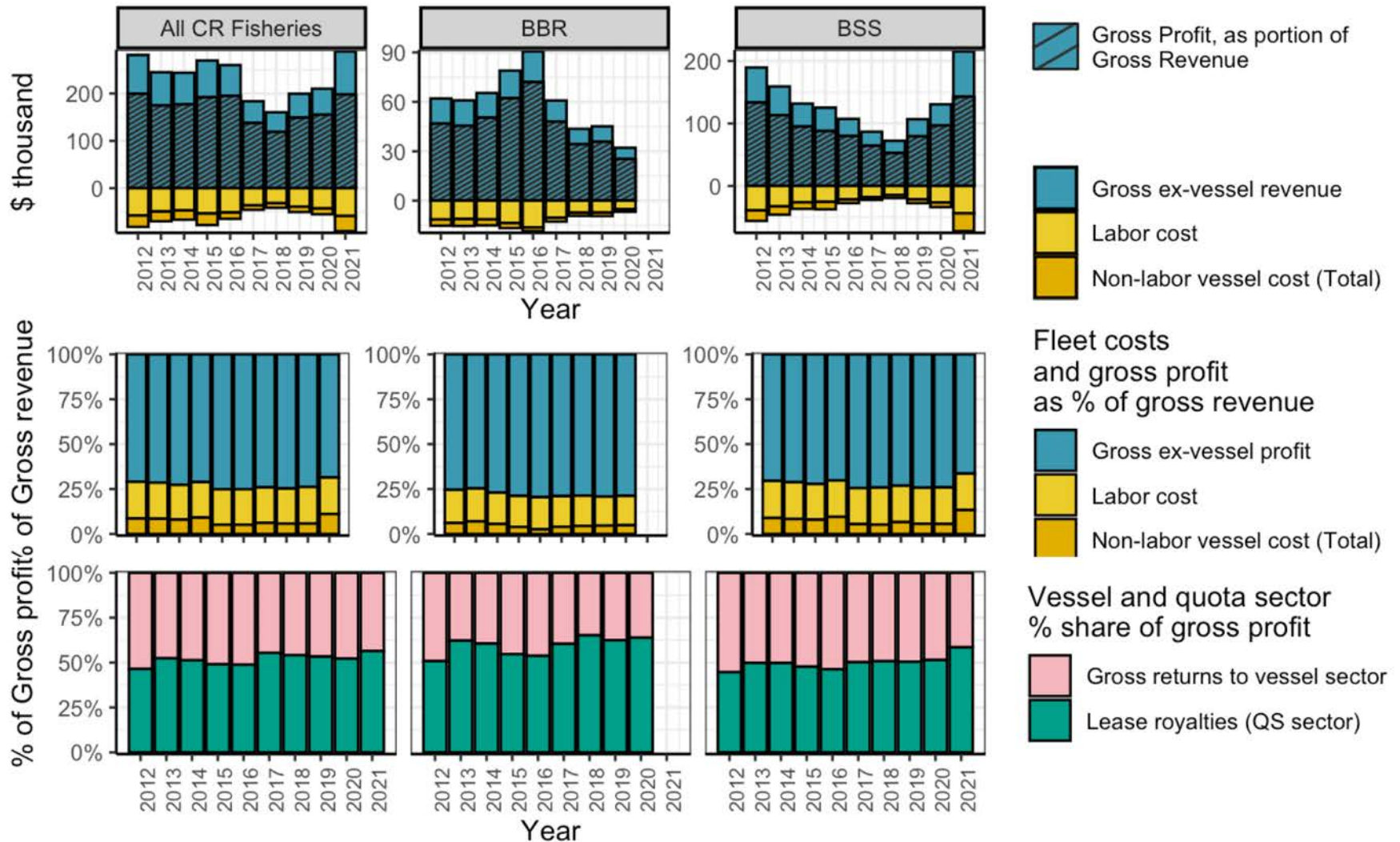


Owner Type    ■ Individual    ■ Trust/Estate    ■ CDQ/Nonprofit    ■ Corporate

# Crab Economic SAFE – QS Pool "Active ownership"



# Crab Economic SAFE – Fleet Financial Performance

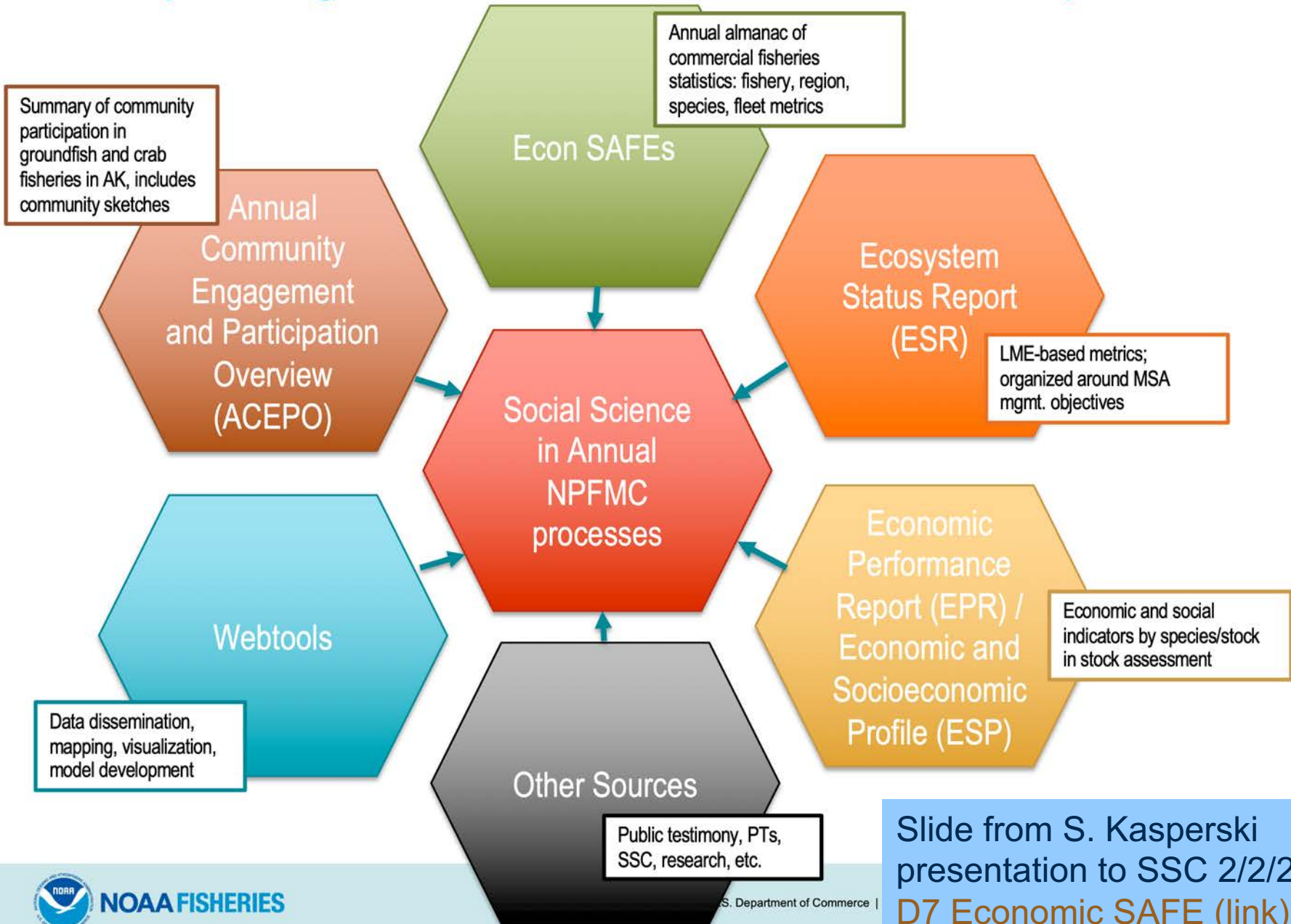


# AFSC/ESSR Annual\* NPFMC Decision Support Document Suite

## SSC comments/response

- ❑ ...undertake a comprehensive, inclusive, and transparent review of how socioeconomic information is incorporated across the range of evolving Council decision-informing products (EconSAFEs, ACEPO, ESPs, EPRs, ESRs...)
  - Initial discussions, planning underway
  - ESSR internal planning – pending new hire
  - Stakeholder outreach
- ❑ Cross reference ACEPO in EconSAFEs summarizing the most recent social and community information available
  - Will address as needed, pending document production plan/integration
- ❑ Document COVID impacts in SAFE reports re: large deviations in economic data time series; include a separate COVID impacts section with a holistic summary and synthesis of impacts that may span multiple years
  - More comprehensive review for next iteration of Economic SAFE documents (pending)

# AFSC providing social science info into Annual NPFMC processes



Slide from S. Kasperski presentation to SSC 2/2/23  
[D7 Economic SAFE \(link\)](#)

# AFSC/ESSR Annual\* NPFMC Decision Support Document Suite

## Evolution of Economic SAFE Reports

- Ongoing process of discovering purpose(s) of Economic SAFE
  - Statistical almanac
  - Annual program review update
  - ?
  - SSC review role/requirements
- Integration with ACEPO
- Integration with ESP/EPR production
  - Consensus re: reconceptualization of socioeconomic portion of ESP
  - Merge EPR<>ESP?
  - Resource constraints

# AFSC/ESSR Annual\* NPFMC Decision Support Document Suite

## Evolution of Economic SAFE Reports

- Ongoing process of discovering purpose(s) of Economic SAFE
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- Integration with ACEPO
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# AFSC/ESSR Annual\* NPFMC Decision Support Document Suite

Future directions...

Tools development:

- Economic SAFE codebase
- AKFIN - Human Dimensions Dashboard and shinyfin server

Personnel changes:

- new FTE pending

Partner engagement

- Council/AKR
- New partners



**Thanks! Questions?**