

Ecosystem Socioeconomic Profile (ESP) Sablefish

Review of partial ESP, changes from previous ESP, new indicators, new simple indicator analysis, ecosystem and socioeconomic considerations



NOAA
FISHERIES

K. Shotwell, D. Goethel, A. Deary,
K. Echave, K. Fenske, B. Fissel, D.
Hanselman, C. Lunsford, K.
Siwicke, J. Sullivan

Overview

Appendix in SAFE report

- Full ESPs in 2017-2019
- Partial update 2020
- 10 editors, 14 contributors
- Recommendations:
investigate 2014 year class
decline, evaluate highly
engaged communities

Appendix 3C. Ecosystem and Socioeconomic Profile of the Sablefish stock in Alaska

S. Kalei Shotwell, Ben Fissel, and Dana H. Hanselman
November 2019



Alaska Sablefish

With Contributions from:

Mayumi Arimitsu, Kerim Aydin, Sonia Batten, Steve Barbeaux, Sonia Batten, Curry Cunningham, Alison Deary, Miriam Doyle, Georgina Gibson, Jodi Pirtle, Patrick Ressler, Dale Robinson, Cara Rodgveller, Chris Rooper, Kevin Siwicke, Kally Spalinger, Wesley Strasburger, Rob Suryan, William Sydeman, Johanna Vollenweider, Cara Wilson, and Sarah Wise

Changes in Data

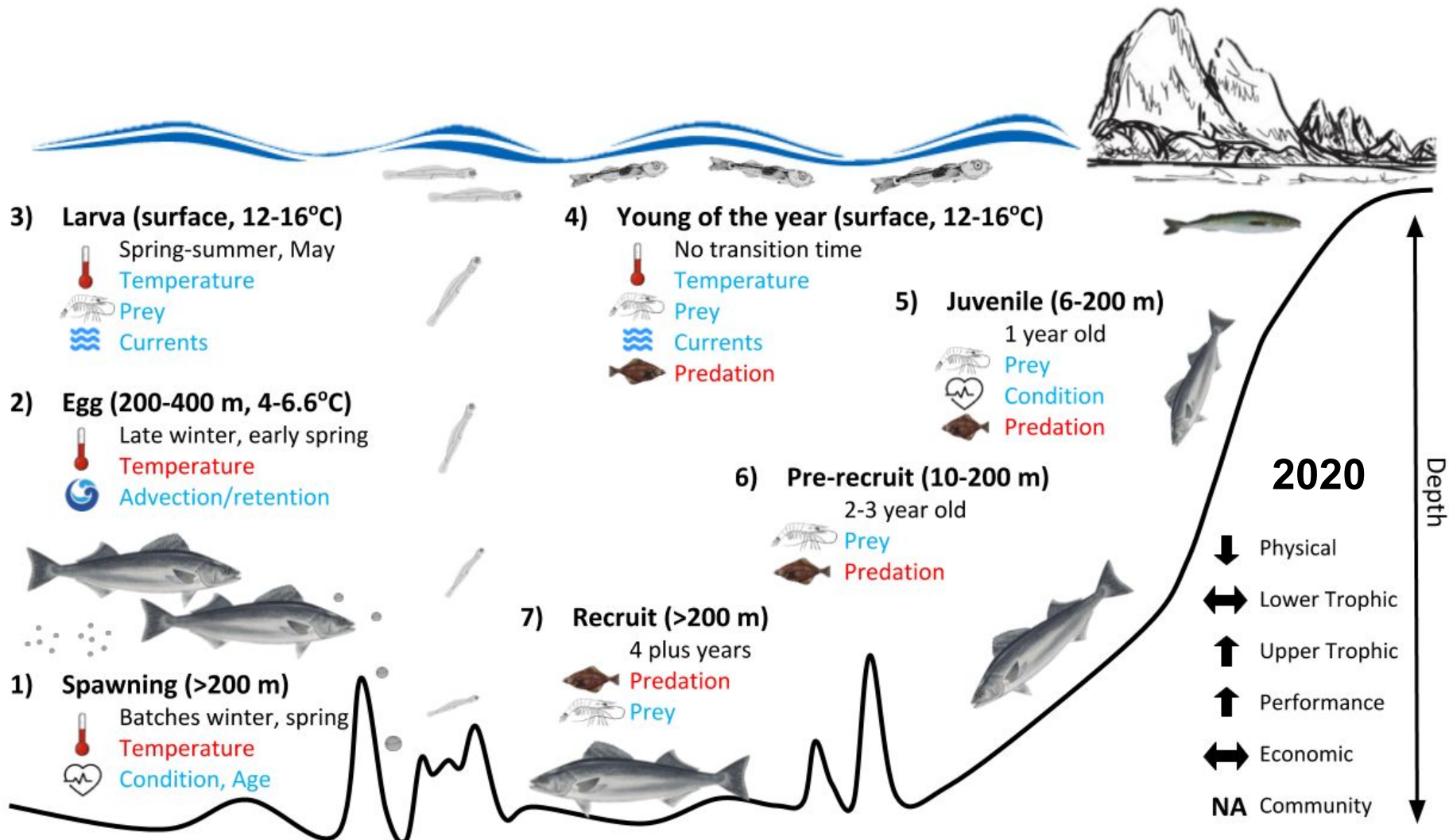
- Ecosystem

- New chlorophyll *a* biomass, bloom timing, copepod size
- Updated sea surface temperature to supported product
- Updated survey condition to match bottom trawl method

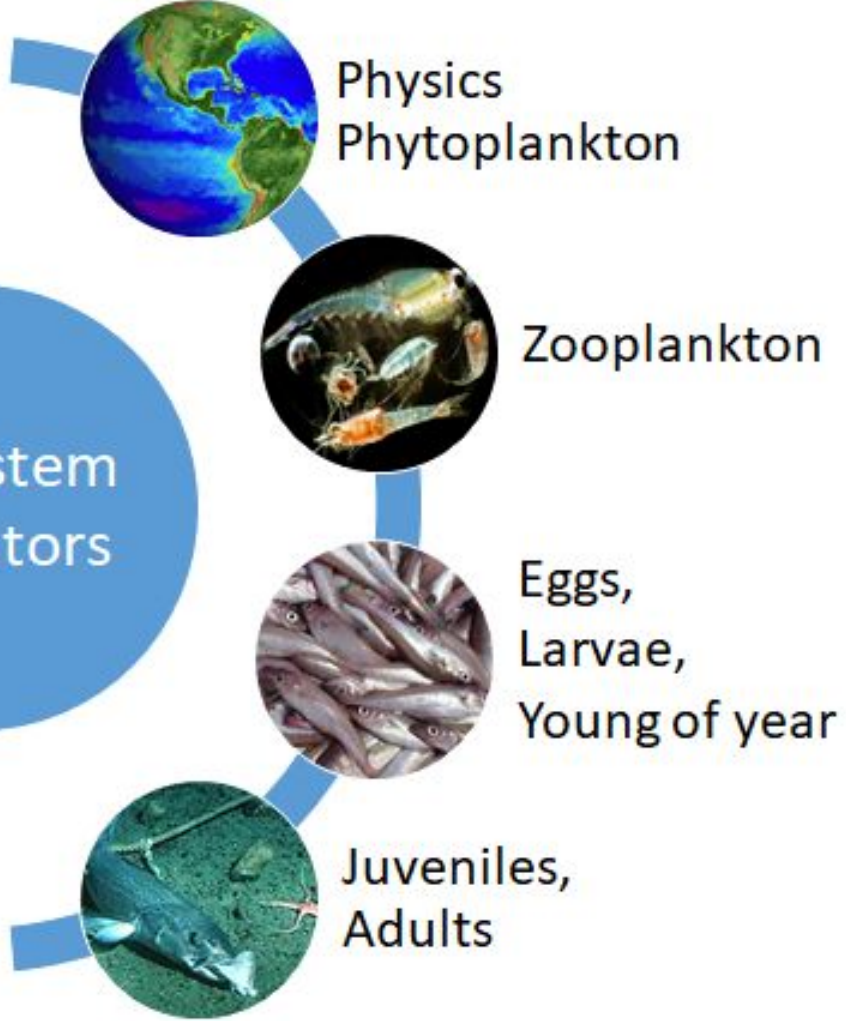
- Socioeconomic

- Updated socioeconomic processes section with new economic data and community engagement discussion
- Updated fishery condition to match bottom trawl method
- Updated price to be an average over all sizes

Ecosystem Processes



Current Ecosystem Indicators



Ecosystem Indicators

Physics
Phytoplankton

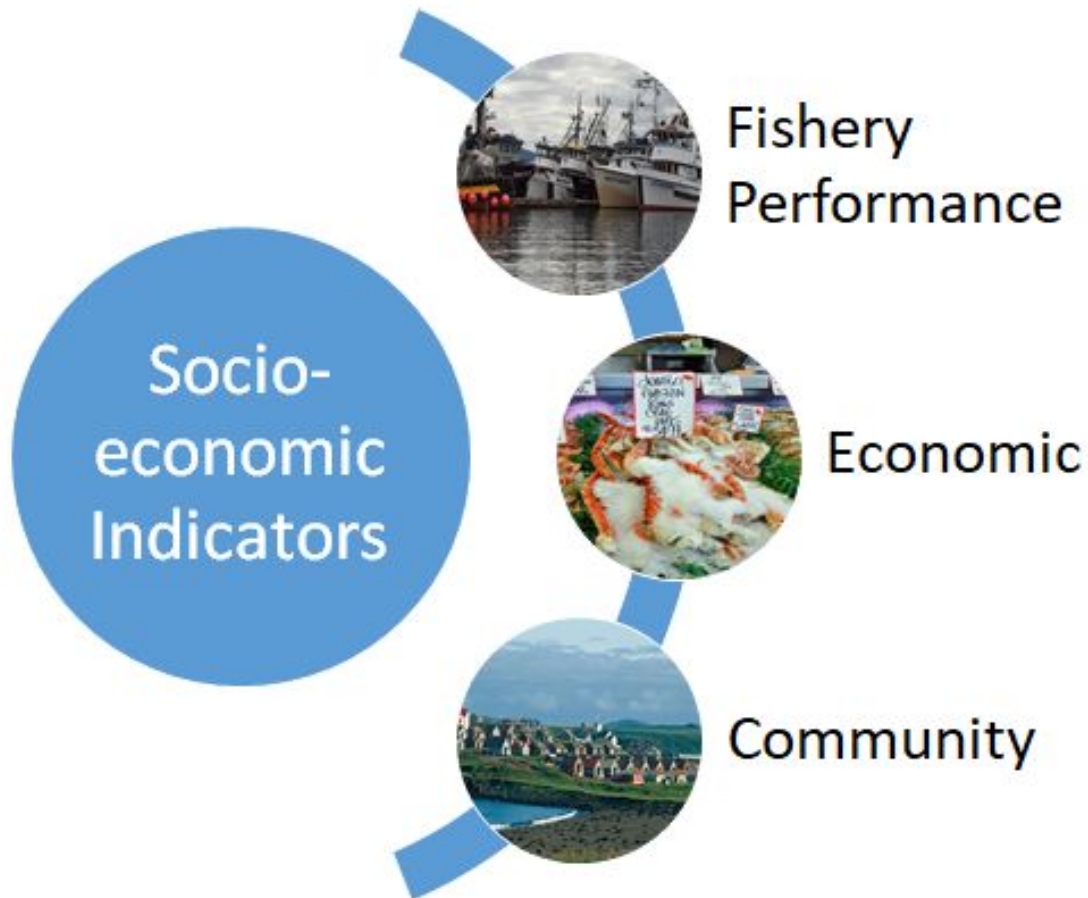
Zooplankton

Eggs,
Larvae,
Young of year

Juveniles,
Adults

1. Annual Marine heatwave index
2. Bottom temperature Longline
3. Sea surface temperature (satellite)
4. Chlorophyll *a* biomass, (satellite)
5. Spring bloom peak timing (satellite)
6. Copepods community (CPR)
7. Euphausiids (acoustic backscatter)
8. YOY growth seabird diets
9. Juvenile CPUE, ADF&G nearshore
10. Juvenile CPUE, bottom trawl survey
11. Spawner mean age, evenness
12. Age 4 (juv) condition, Longline survey
13. Predator biomass, arrowtooth
14. Incidental catch sablefish in ATF fishery
15. Adult condition, Longline survey

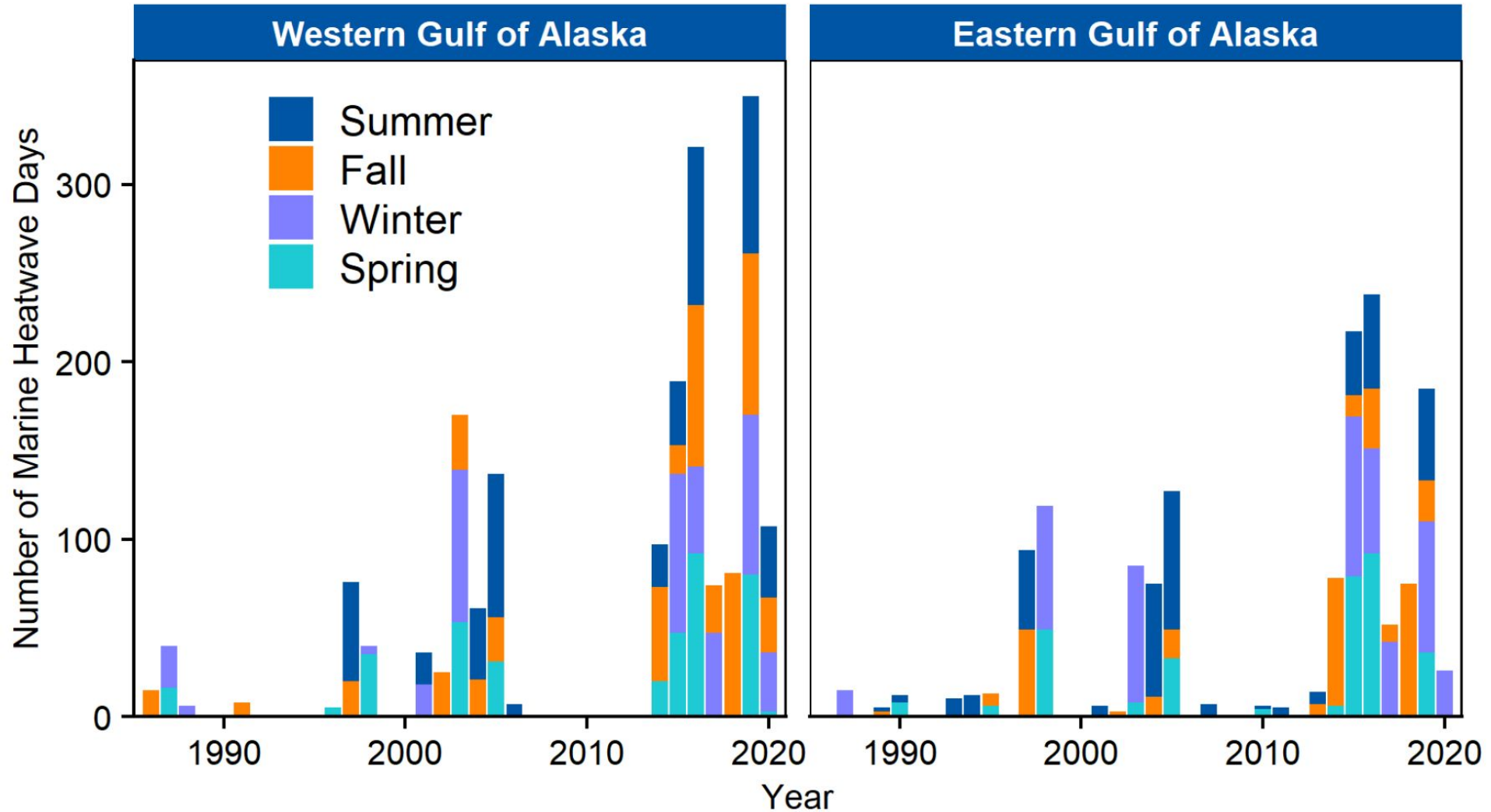
Current Socioeconomic Indicators



1. CPUE Longline GOA
2. CPUE Pot BSAI
3. Incidental Catch GOA
4. Incidental Catch BSAI
5. Fish condition GOA fishery
6. Fish condition BSAI fishery
7. Ex-vessel value
8. Ex-vessel price per pound

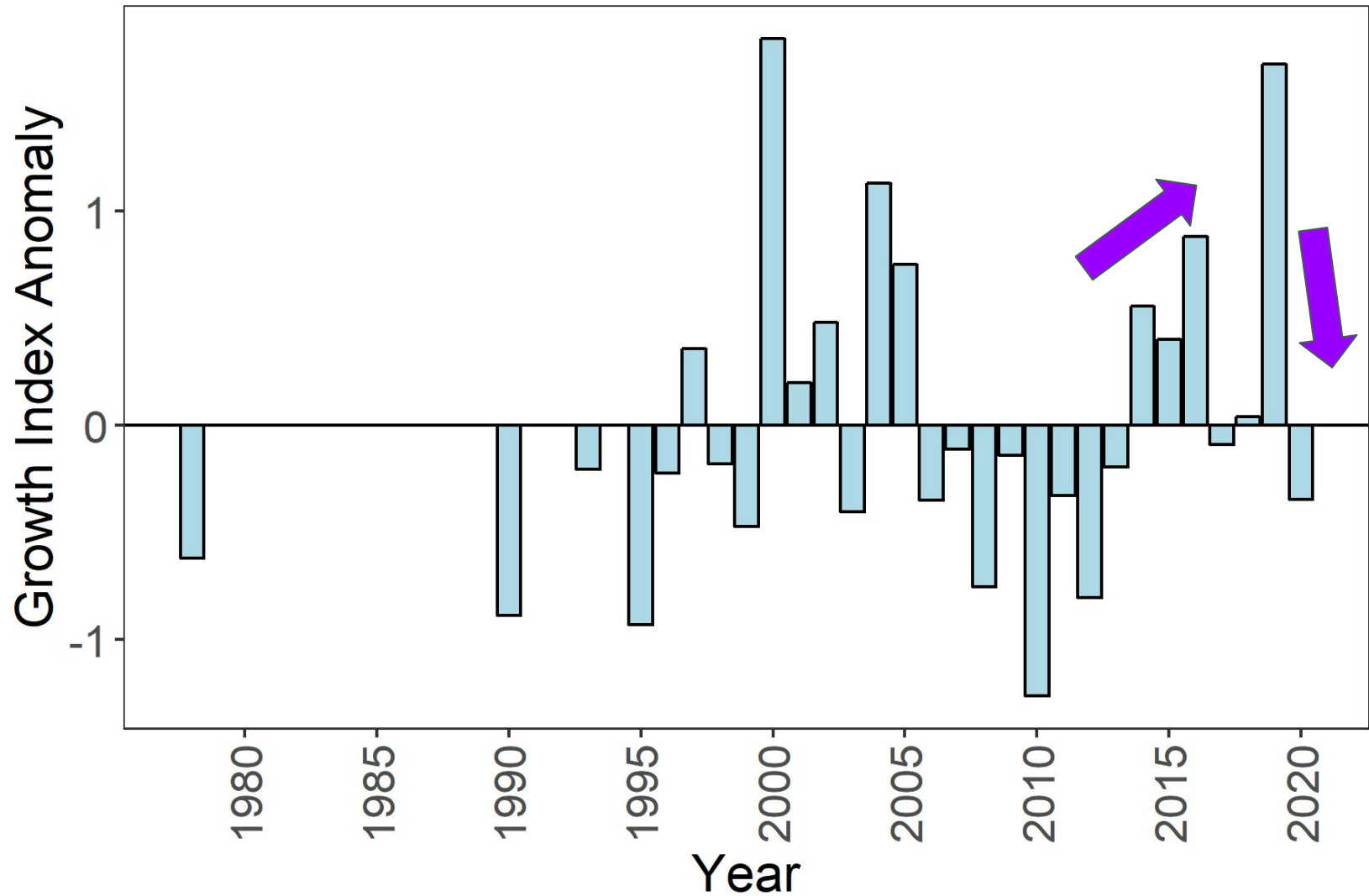
Physics - Heatwave

Courtesy Watson



Growth Index - YOY

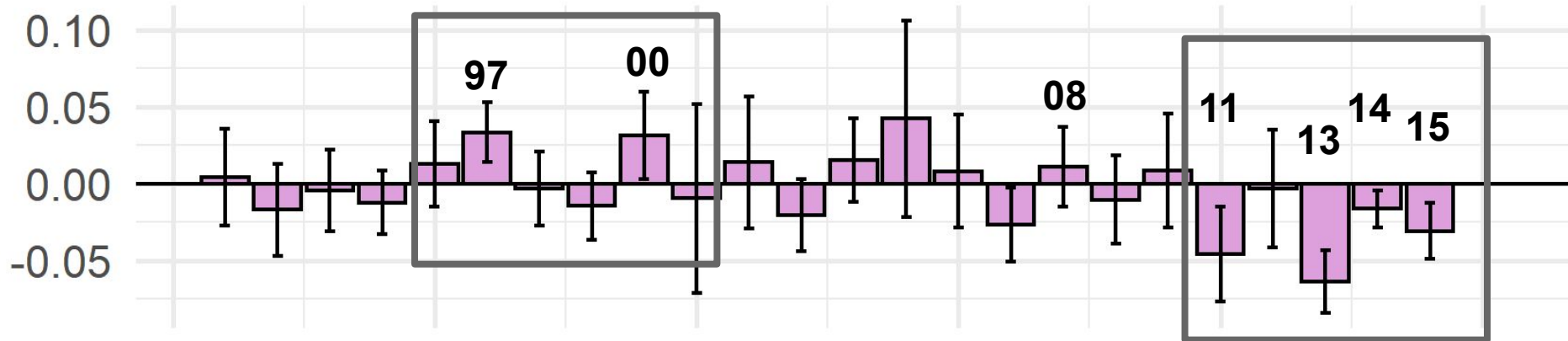
Courtesy Arimitsu



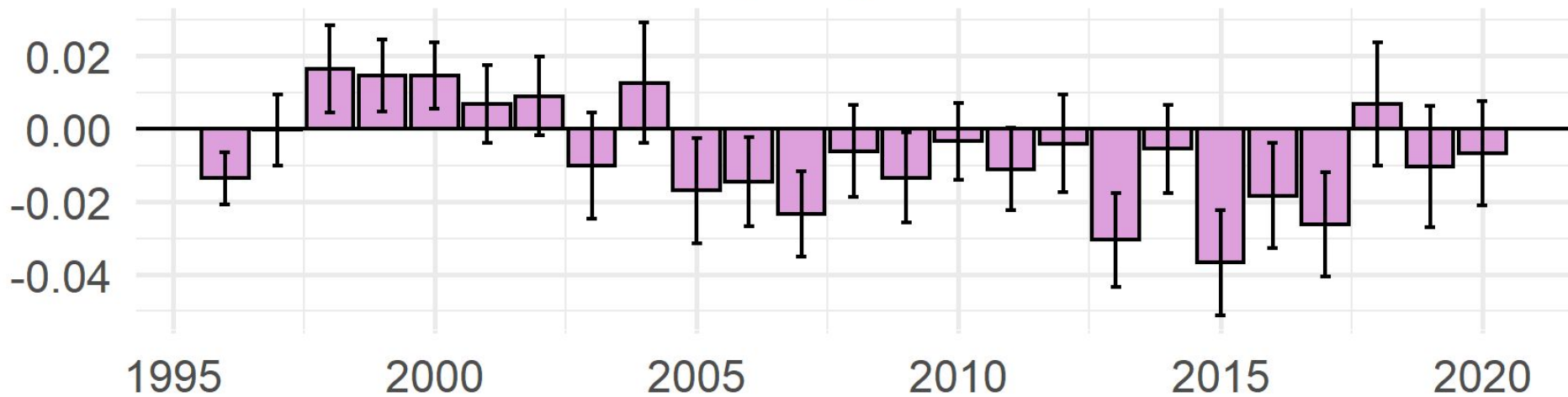
Survey Condition

Courtesy Sullivan, Siwicke

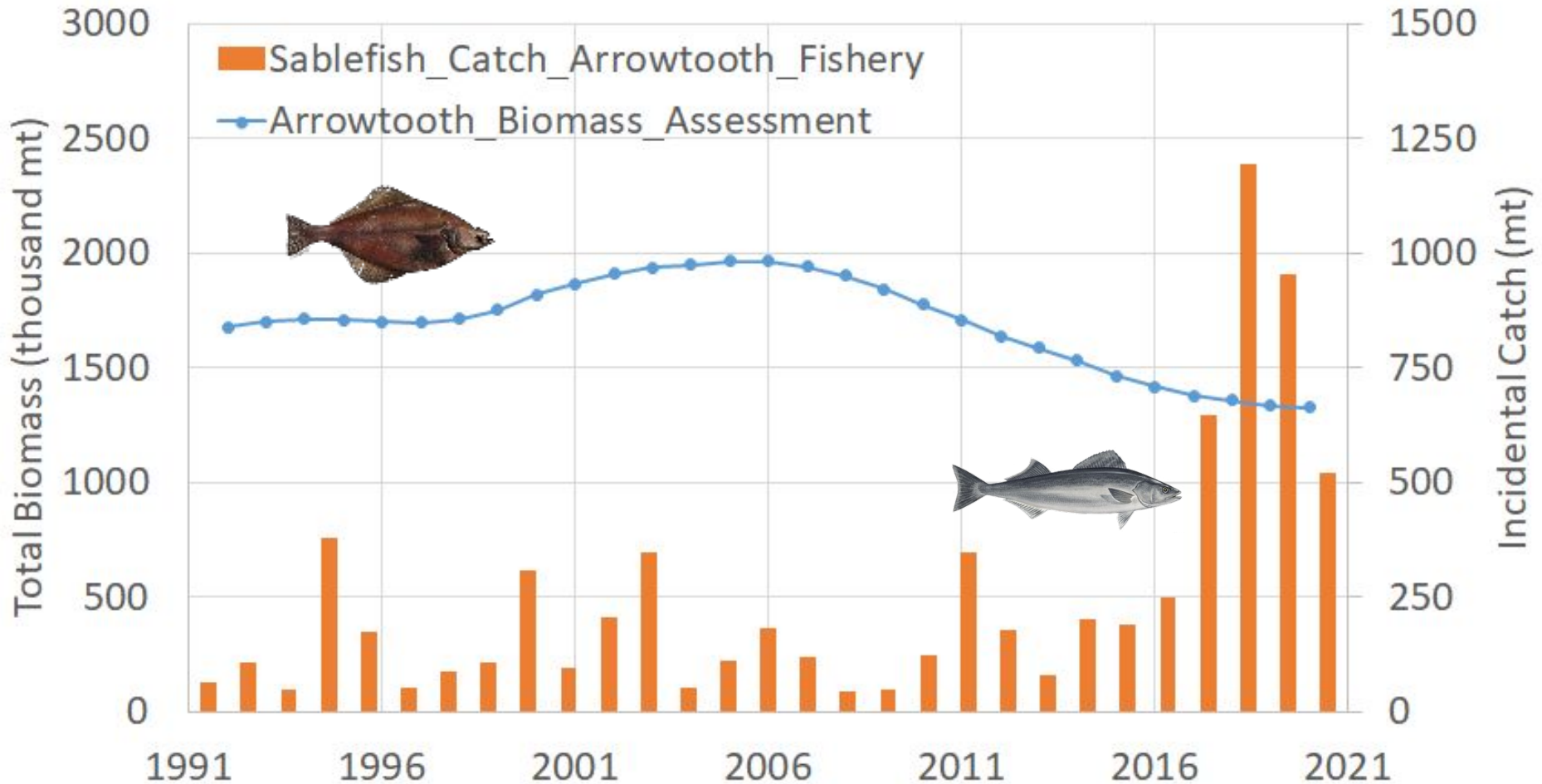
GOA LL Survey: Age-4 immature females



GOA LL Survey: Large females ≥ 75 cm



Incidental Catch in ATF



Changes in Model

- 1st Stage Simple Score

- Requested by SSC for ESPs in February 2020
- Based on value compared to 1 sd from mean of series
- Use +1, -1, 0 to count G/P/S then / by total indicators
- Evaluate by category and overall total

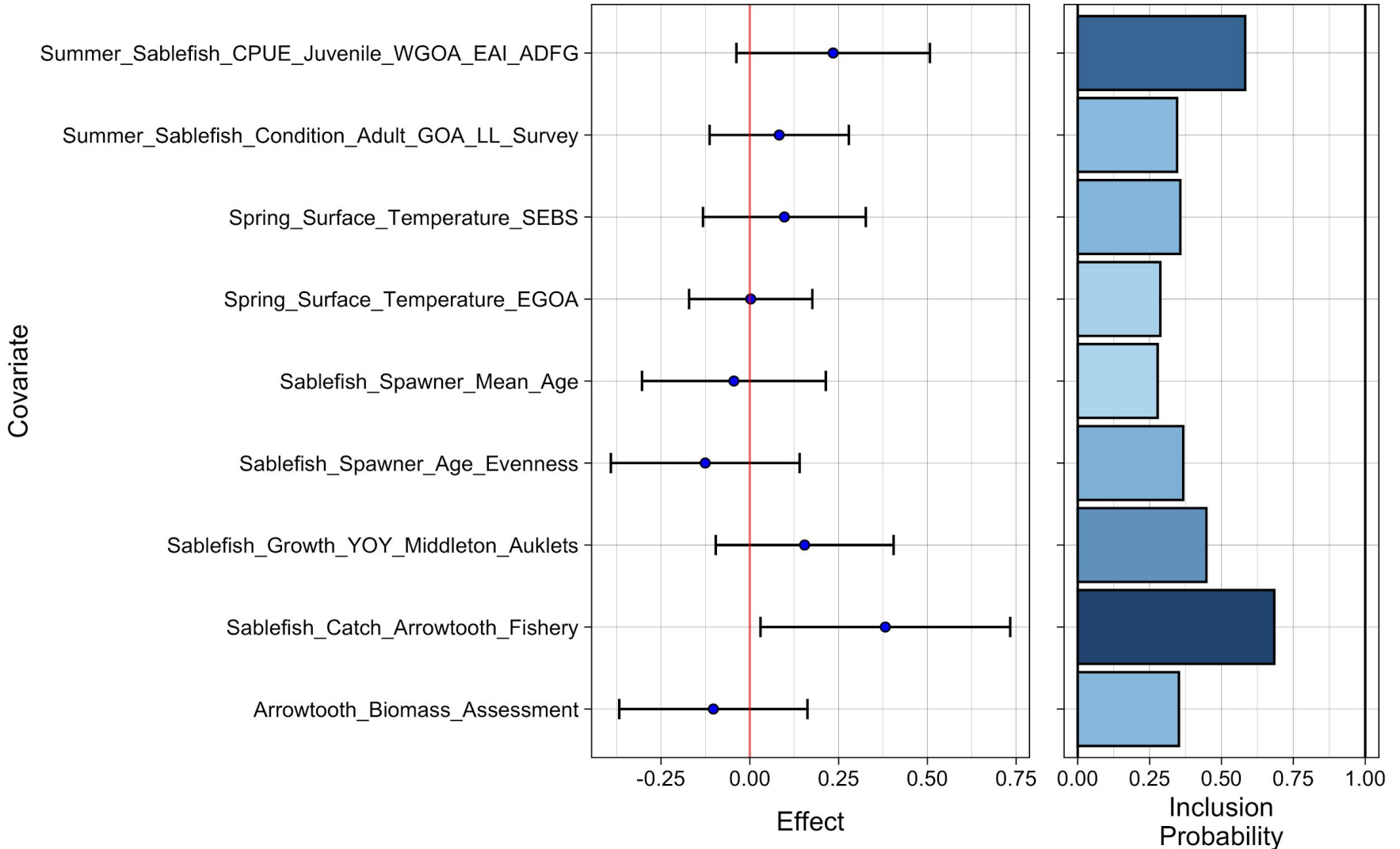
- Historical Score

- Provide a table of scores for last 20 years by category
- Provide graphic of ecosystem and socioeconomic total

Indicator Analysis - Stage 1 Score



Indicator Analysis - Stage 2 BAS



ESP Considerations

- Ecosystem Summary

- Presence of 2016 and 2019 year class in ADF&G survey
- Age 4 generally in poor condition, large females >
- Higher spatial overlap with competitor (Arrowtooth)
- Physical + but < 2019, lower stable and upper slight >

- Socioeconomic Summary

- Incidental catch <GOA, >BSAI sablefish expanding habitat
- Ex-vessel value and price/pound on recent decline
- Highly engaged community analysis in preparation

Questions?

