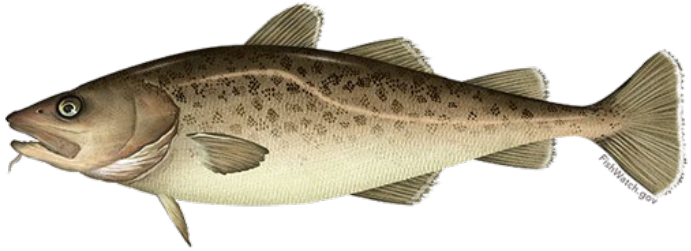


GOA PACIFIC COD

PETE HULSON, STEVE BARBEAUX, BRIDGET FERRISS, KATY ECHAVE, JULIE NIELSEN, S. KALEI SHOTWELL, BEN LAUREL, AND INGRID SPIES

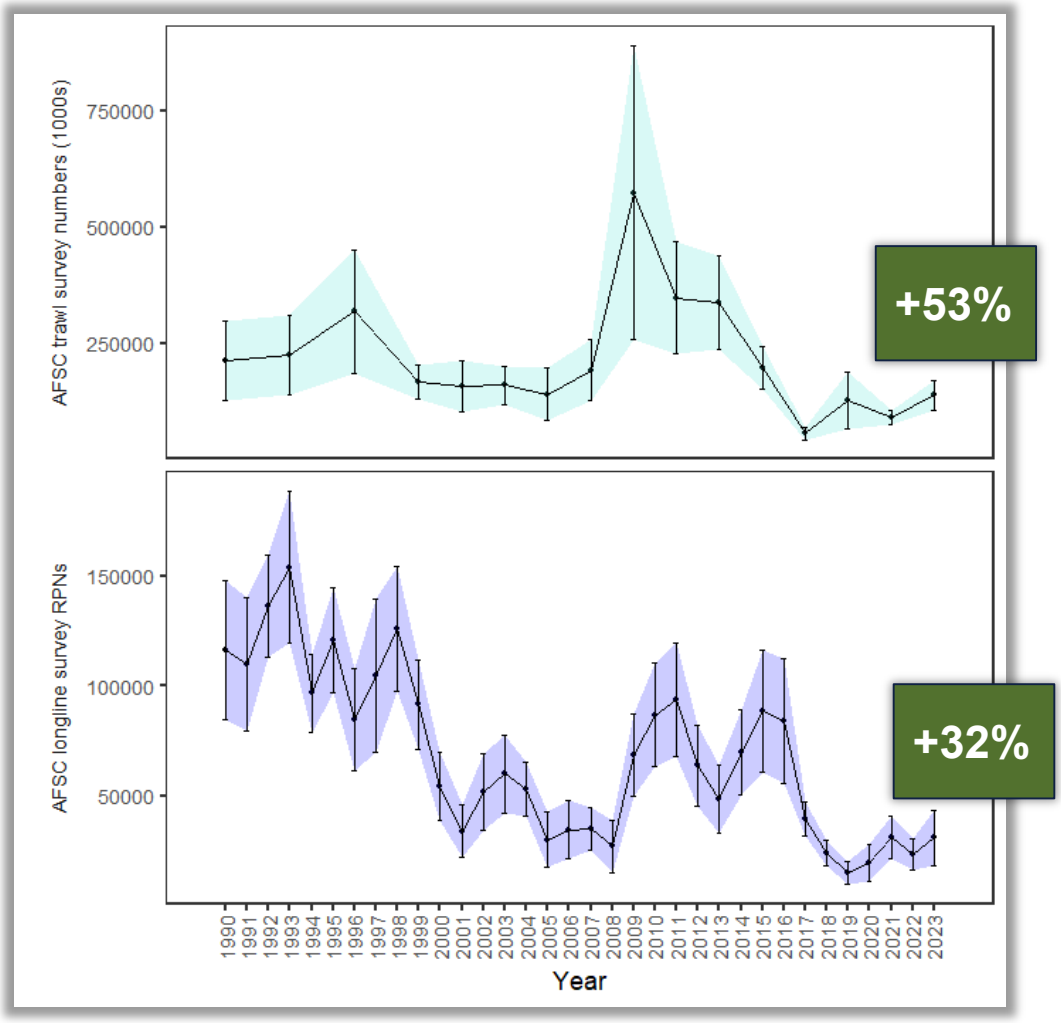
NOAA FISHERIES

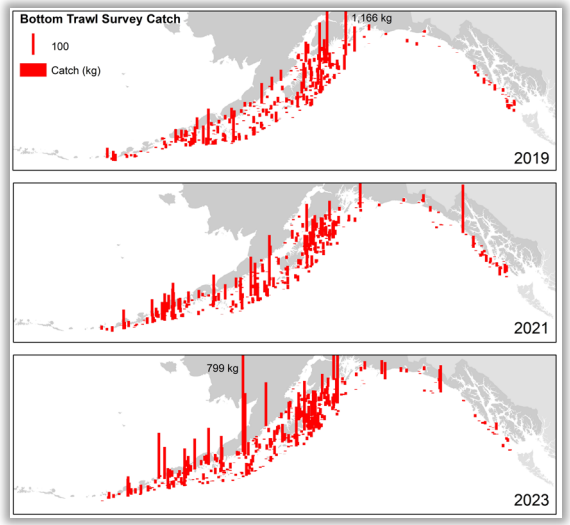
May 2024, Presentation to Freezer Longline Coalition

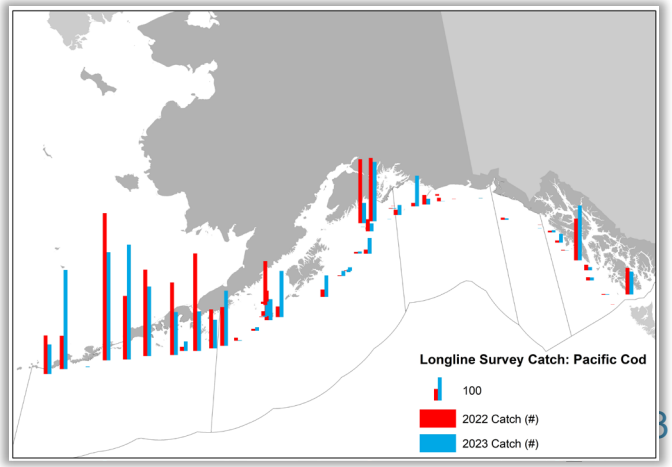
PRESENTATION OVERVIEW

- Recap of 2023 assessment
  - Data
  - Assessment results
  - Management recommendations
- Outcomes of 2023 assessment
- Current/future work
- Current conditions

SURVEYS – FITTED

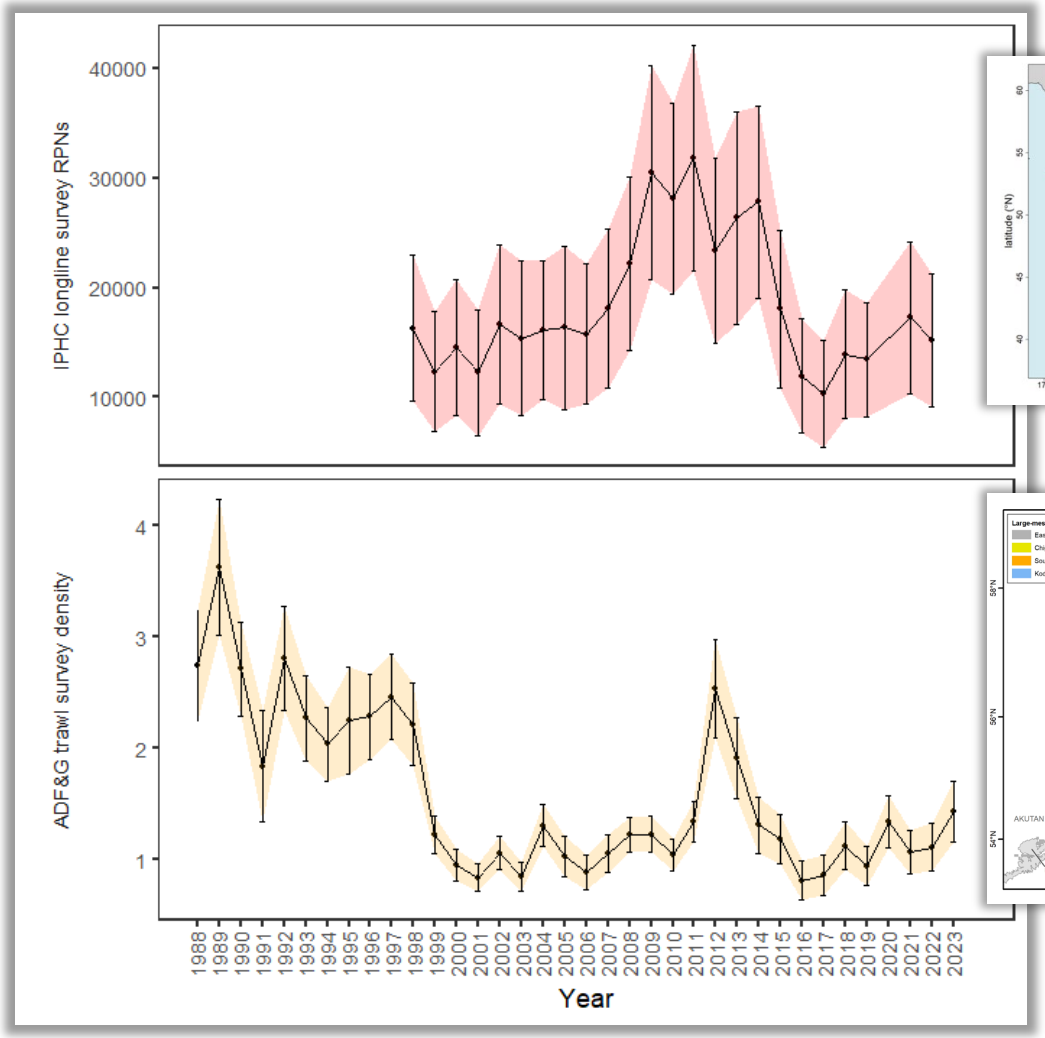


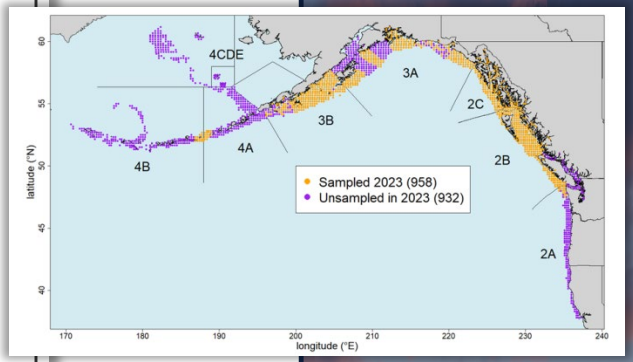


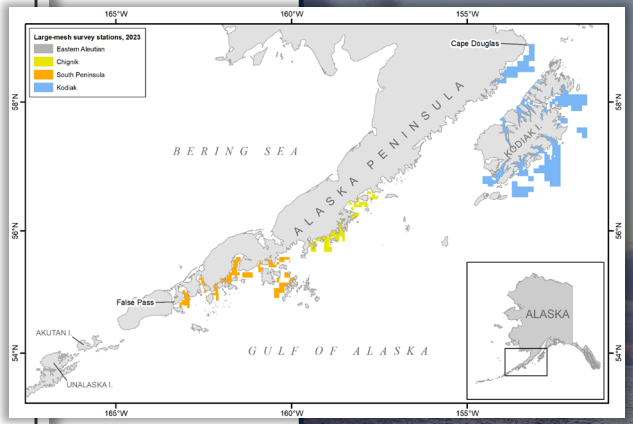


SURVEYS – MONITORED

- Both IPHC and ADF&G on increasing trend

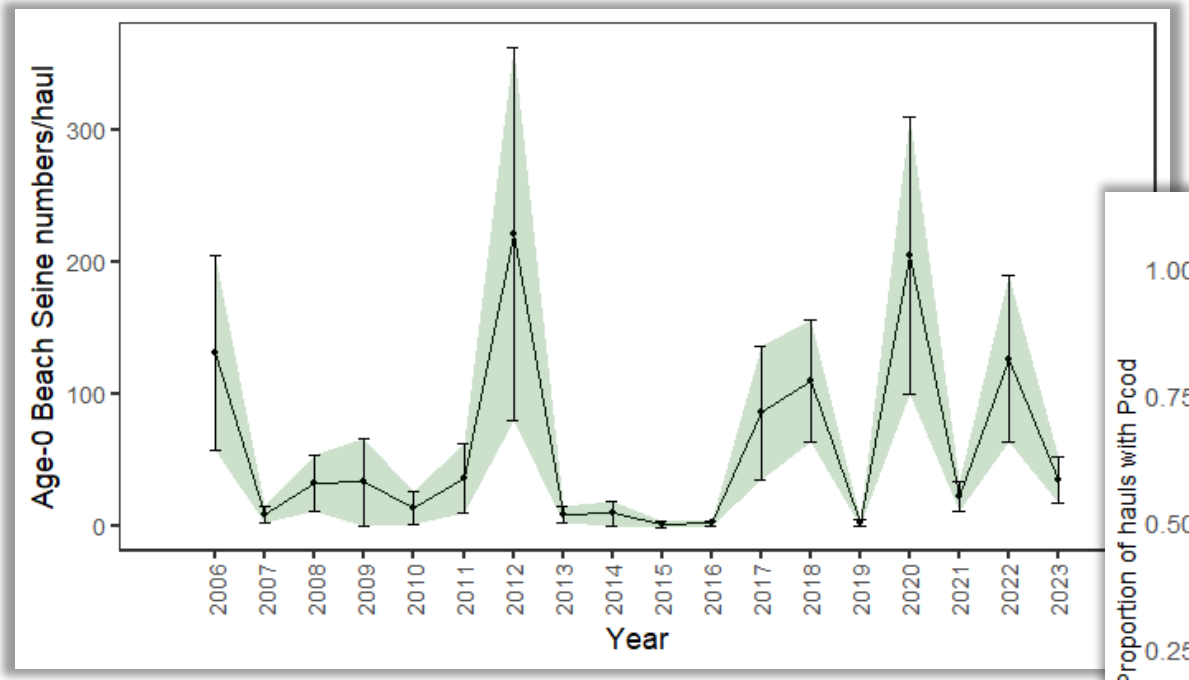


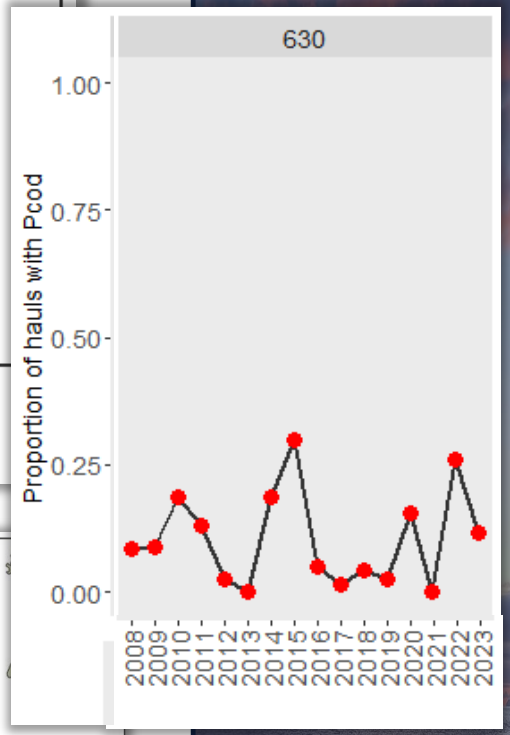


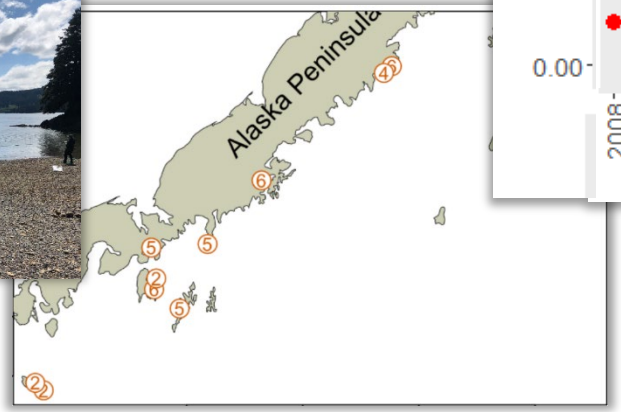


SURVEYS – MONITORED

- Larger 2017/2018, 2020, and 2022 year classes

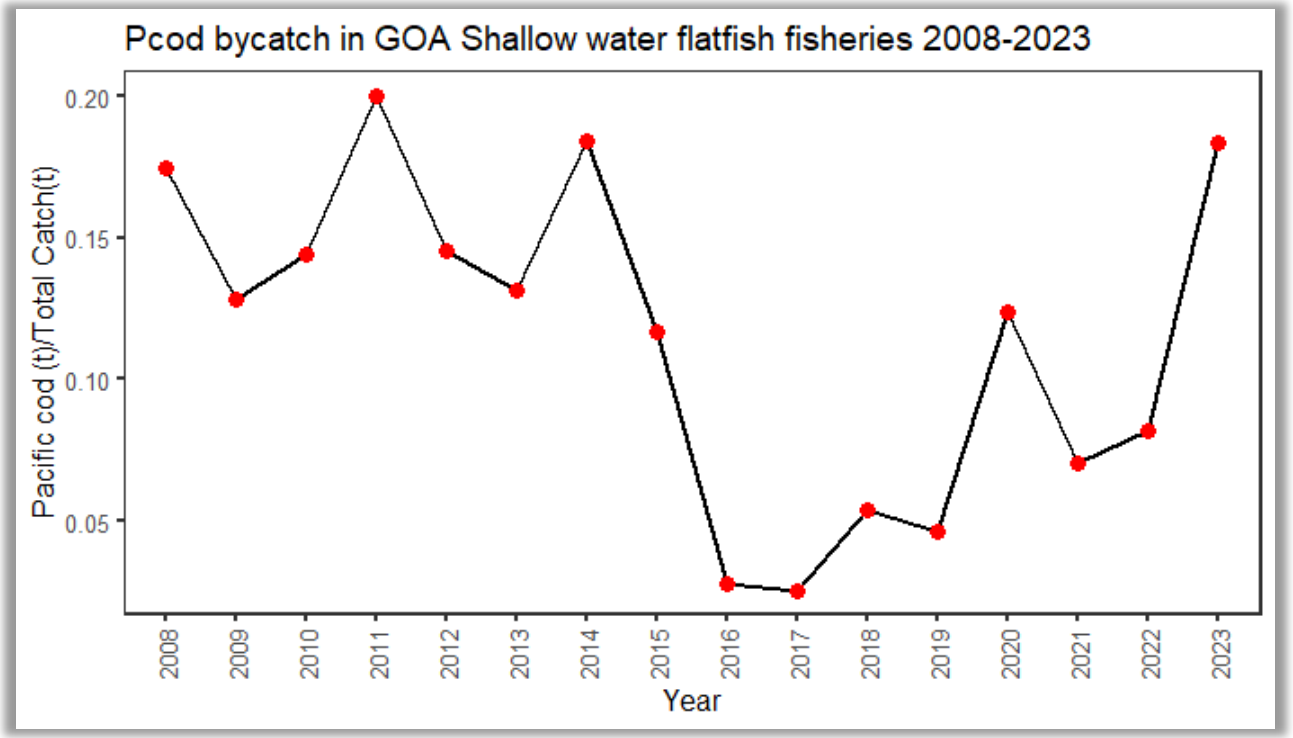






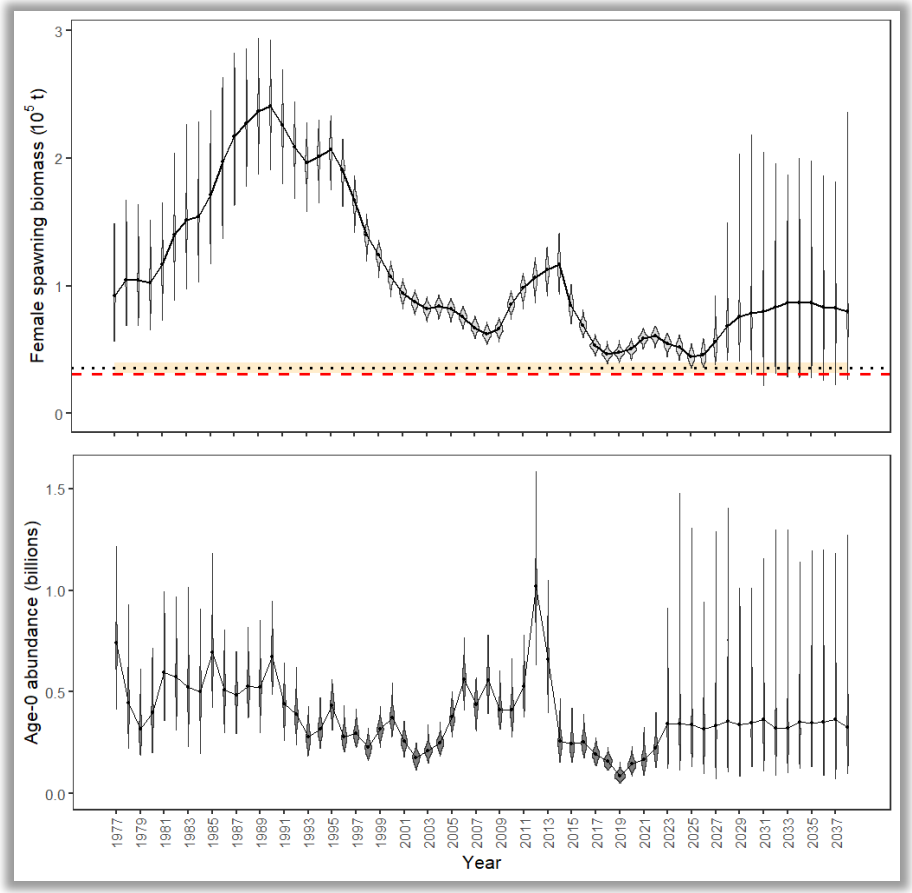
DATA – UNINTENTIONAL CATCH

- SWF bycatch on increasing trend (index of adults)

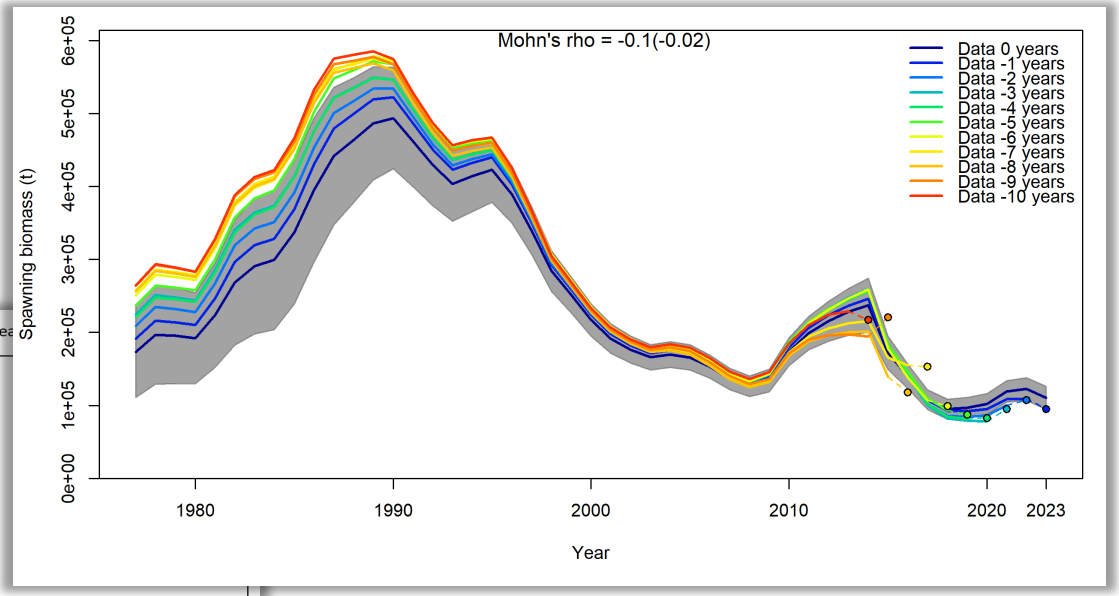


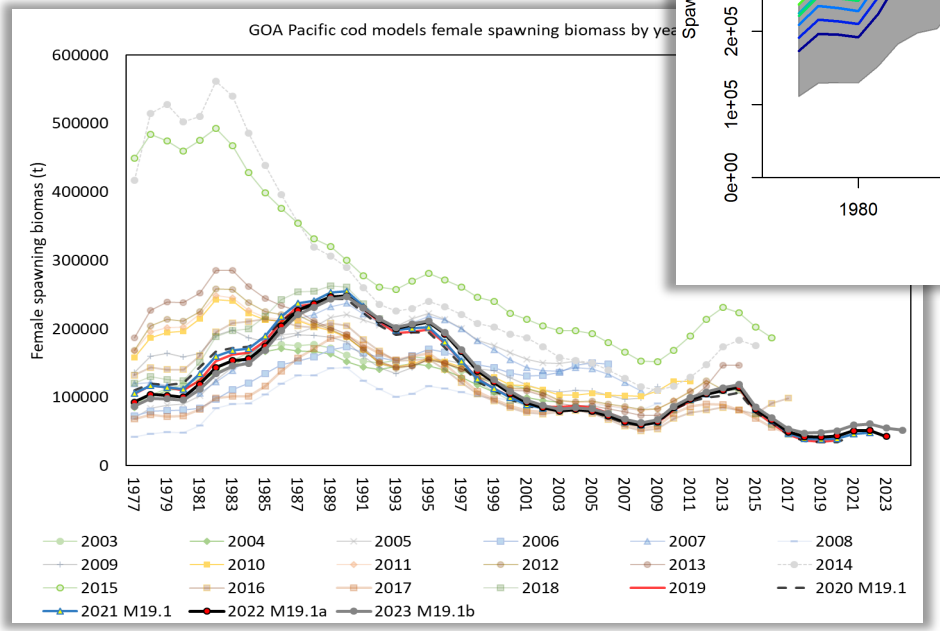
- SSB projected to decrease in near term, then increase (<0.1% MCMC replicates have SSB < $B_{20\%}$ in 2024 and 2025)

- Low recent recruitment estimates with precision, projected average recruitment larger than recent recruitments (since 2014)



RESULTS: TIME SERIES

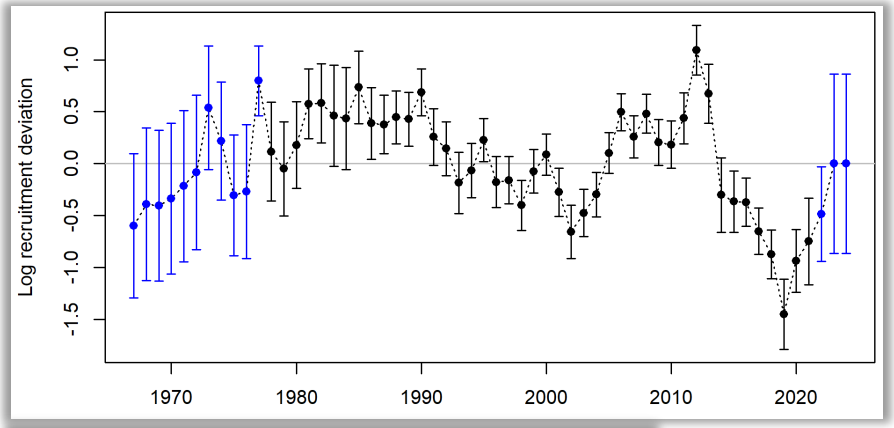




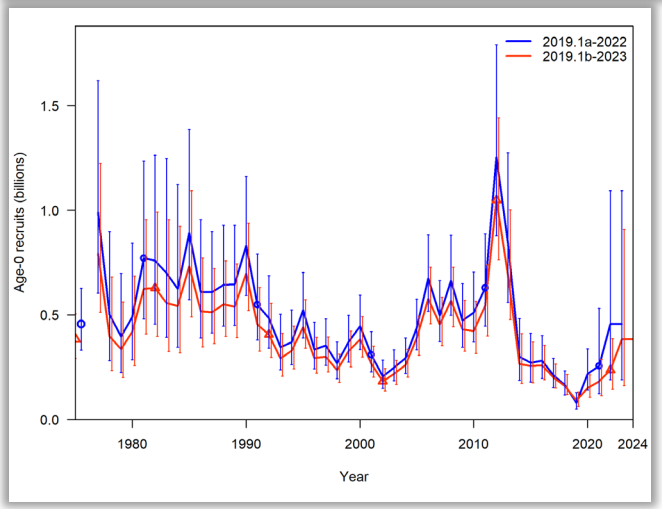
- Low recent SSB retrospective pattern in both model and data (but increased from 2022)

RESULTS: RETROSPECTIVES

- Below average recruitment since 2014 (following a stanza of above avg recruitment)



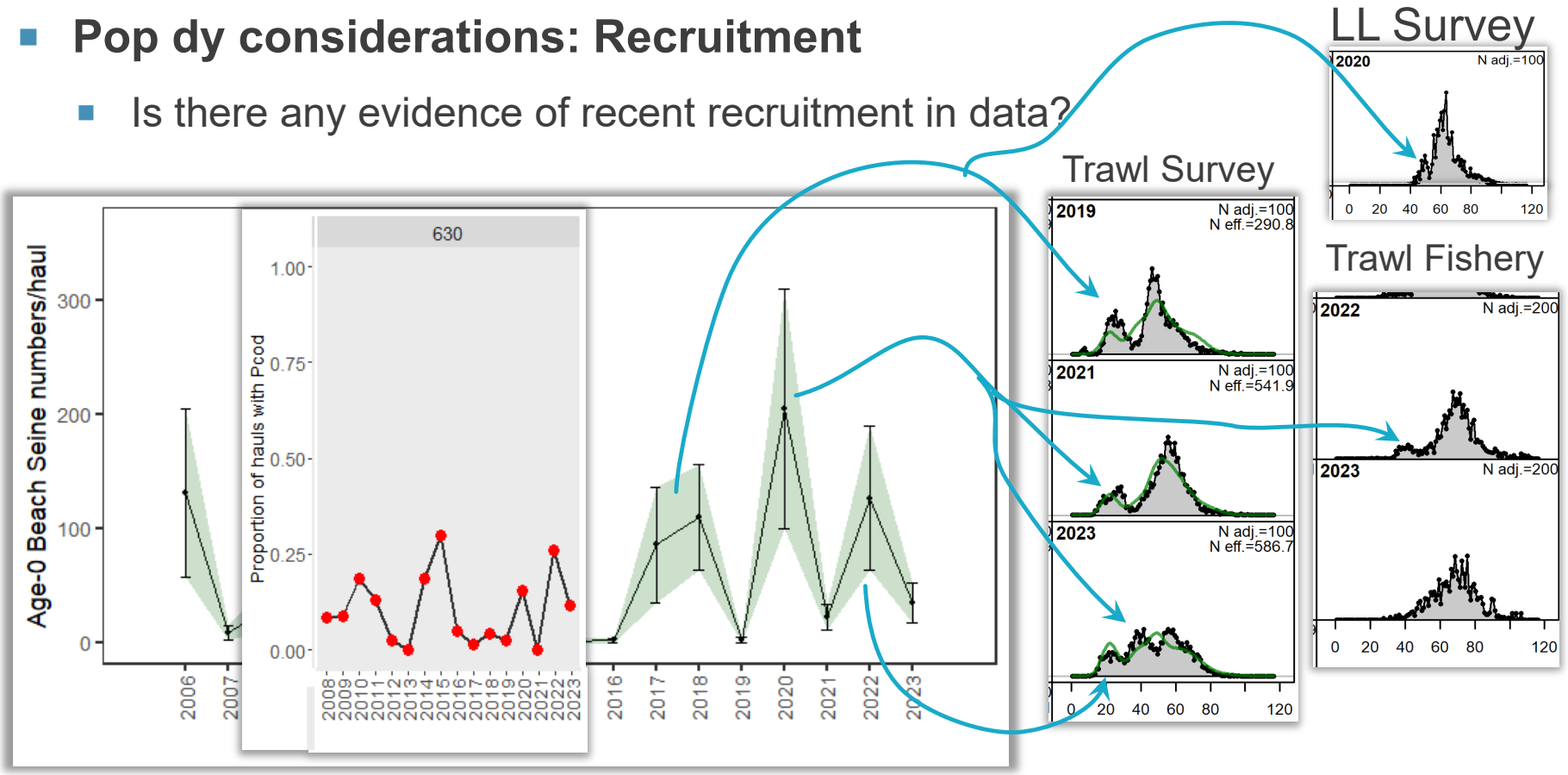
- Recruitment decreased in the 2023 assessment compared to 2022



RESULTS: PARAMETER ESTIMATES

RISK TABLE

- **Pop dy considerations: Recruitment**
  - Is there any evidence of recent recruitment in data?

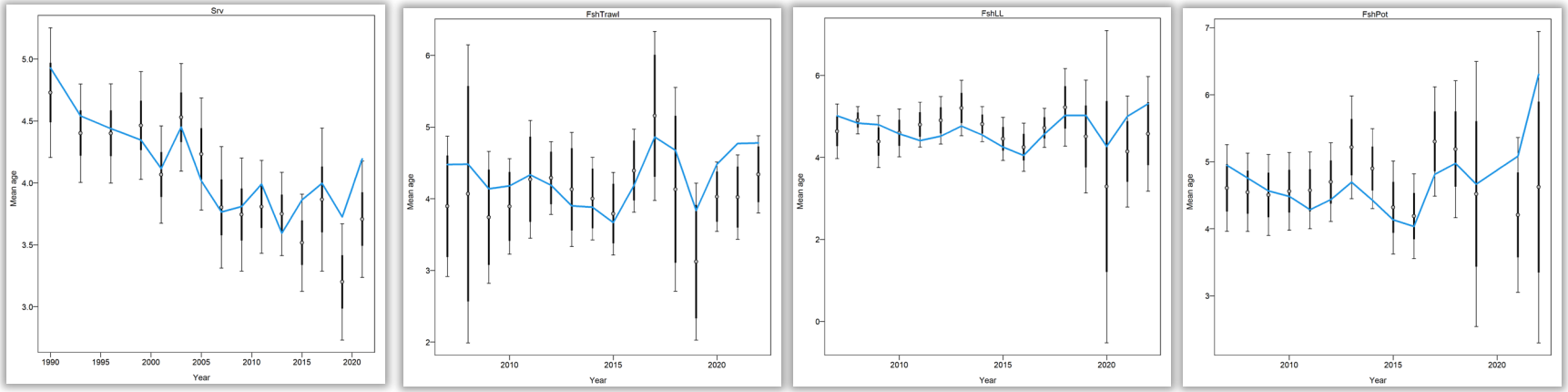


- 2017/18, 2020, and 2022 shows up in length comps, notably in trawl fishery

RISK TABLE

- **Pop dy considerations: Recruitment**
  - Is there any evidence of recent recruitment in data?

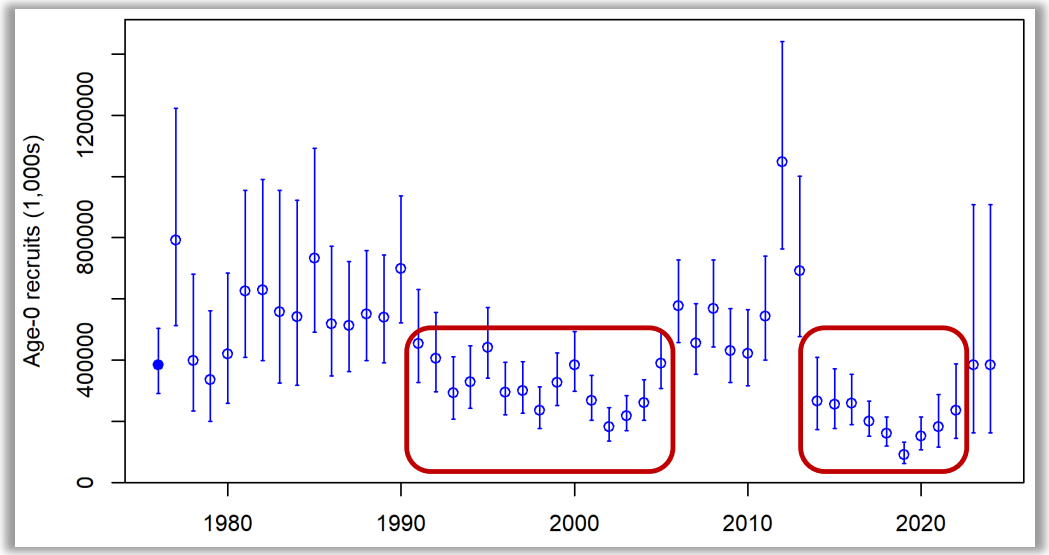
Trawl Survey | Trawl | Longline | Pot



- Estimated mean age > observed mean age

RISK TABLE

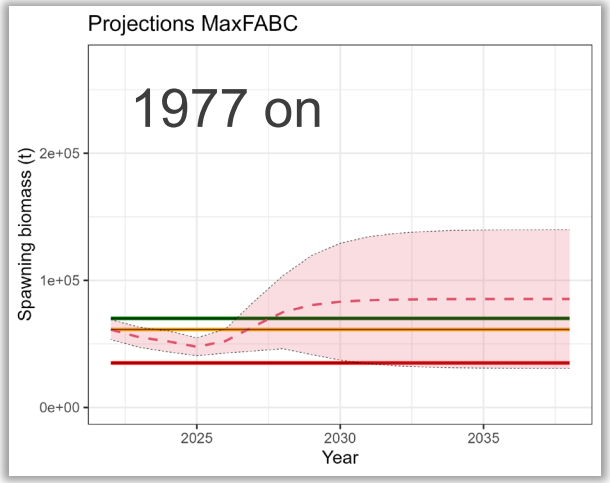
- **Pop dy considerations: Recruitment**
  - Have we been here before?

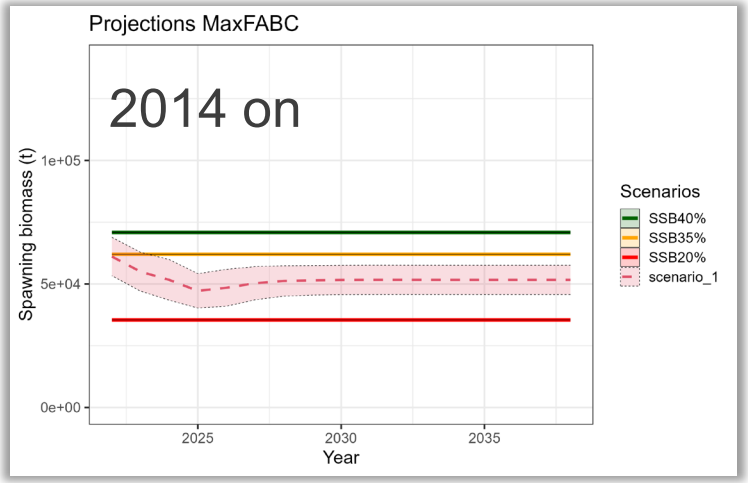


- 2019 draws eye to how low it is, but others similar in scale to what was seen in late 90s – early 00s

SOMETHING TO THINK ABOUT

- **Pop dy considerations: Recruitment**
  - What are the consequences? SSB
  - Use mean recruitment from 2014 on in projections





  - Short term consequences: ~ 2% difference in 2024 ABC
  - Long term consequences: never get back to $B_{35\%}$, hover around $B_{29\%}$

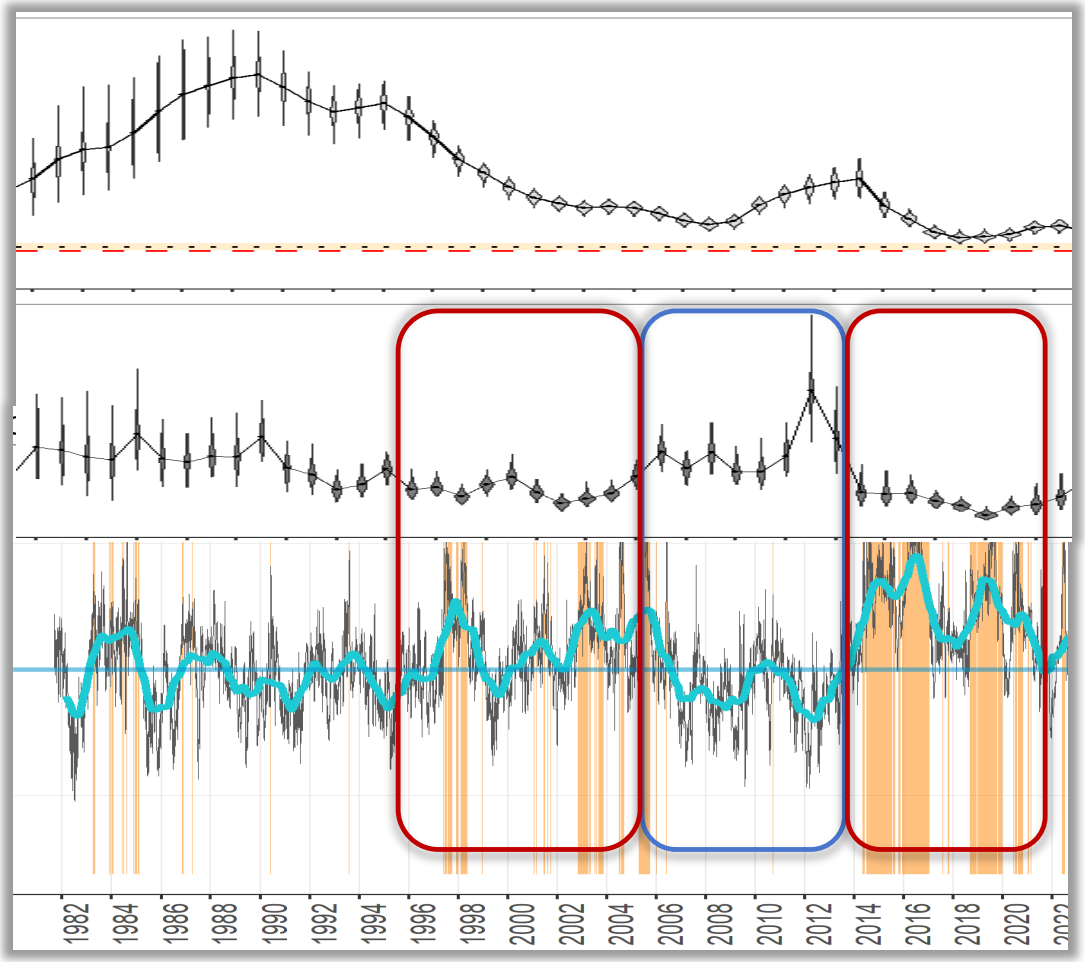
RISK TABLE

- **Pop dy considerations: Relationships with environmental conditions**

SSB

Recruitment

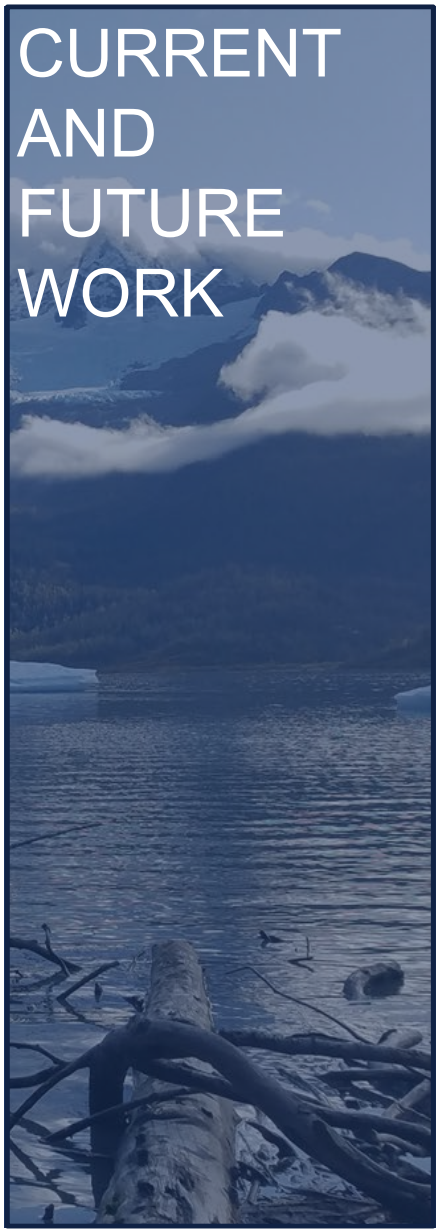
Temp anomalies in Central GOA



OUTCOMES: SSC/PLAN TEAM COMMENTS

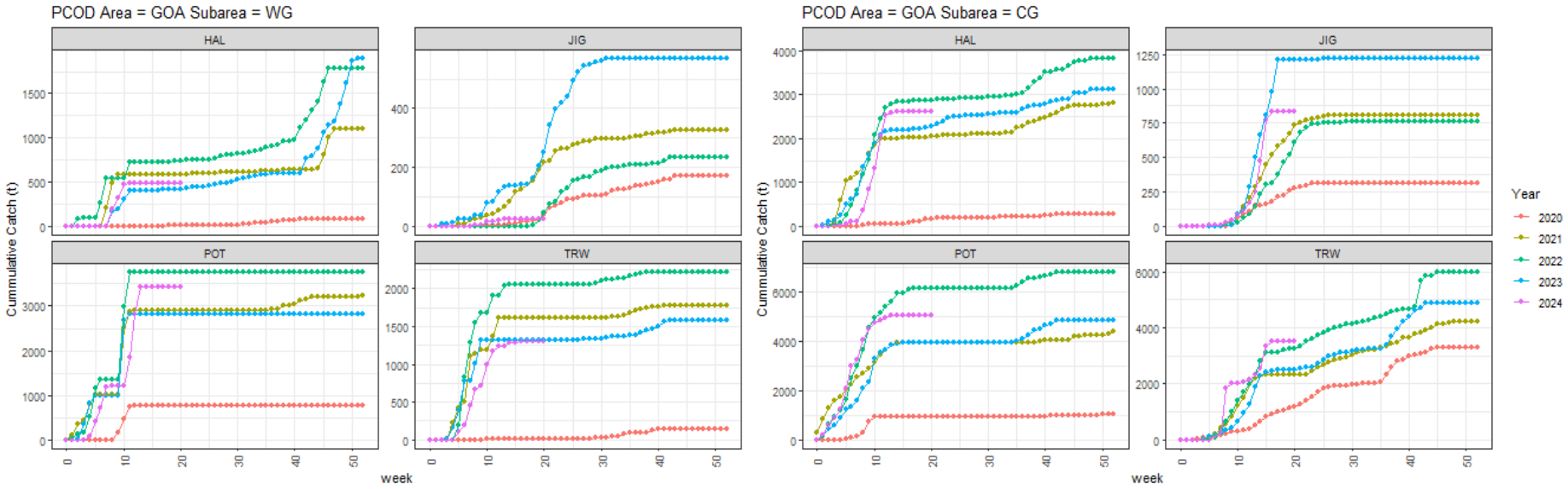
- Reevaluation of time-dependent selectivity-catchability tradeoffs
- Continued evaluation of environmental relationship to SSB-recruitment
- Multi-index apportionment
- Work up backlog of maturity data

CURRENT AND FUTURE WORK

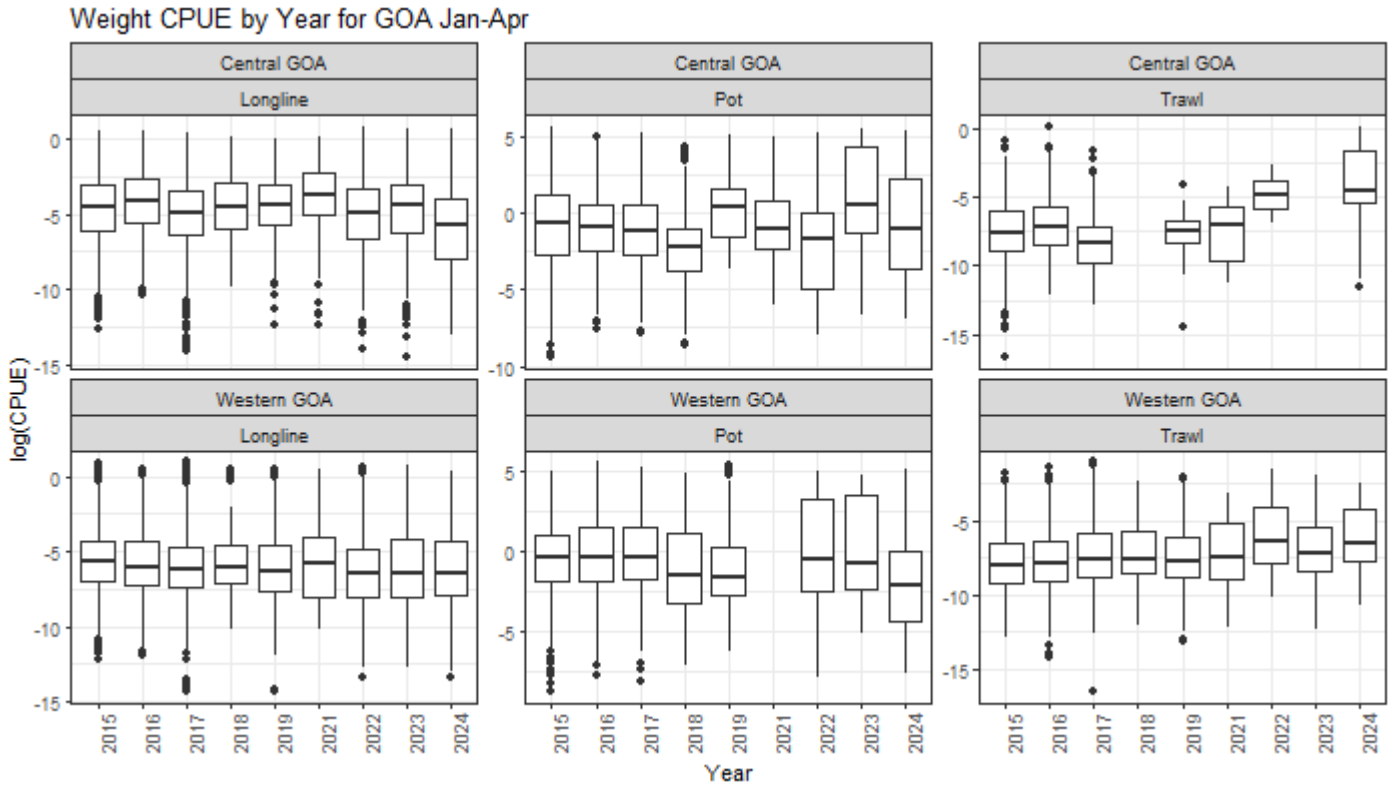
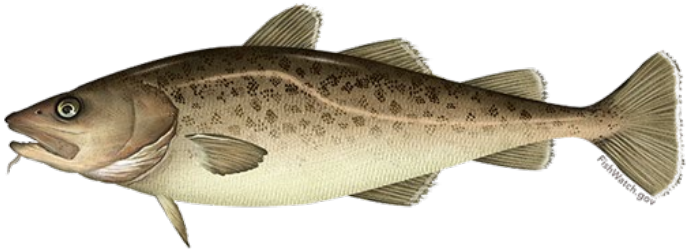


- Assessment to do:
  - Selectivity-catchability analysis
  - Look at 2 index REMA model for apportionment
  - Bin structure
  - Input sample size for comp data
  - Look at what data used for conditional age-at-length
  - Start looking at TMB
  - Growth evaluations
- Something else to consider:
  - Maturity information
- Current research:
  - Krista Oke: env links
  - Claire Rosemond: spatial model for WGOA/EBS

CURRENT CONDITIONS: CATCH



CURRENT CONDITIONS: CPUE



QUESTIONS?