SEDAR 85 – Gulf Yellowedge (*Hyporthodus flavolimbatus*)

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SEFSC

Gulf Fisheries Branch
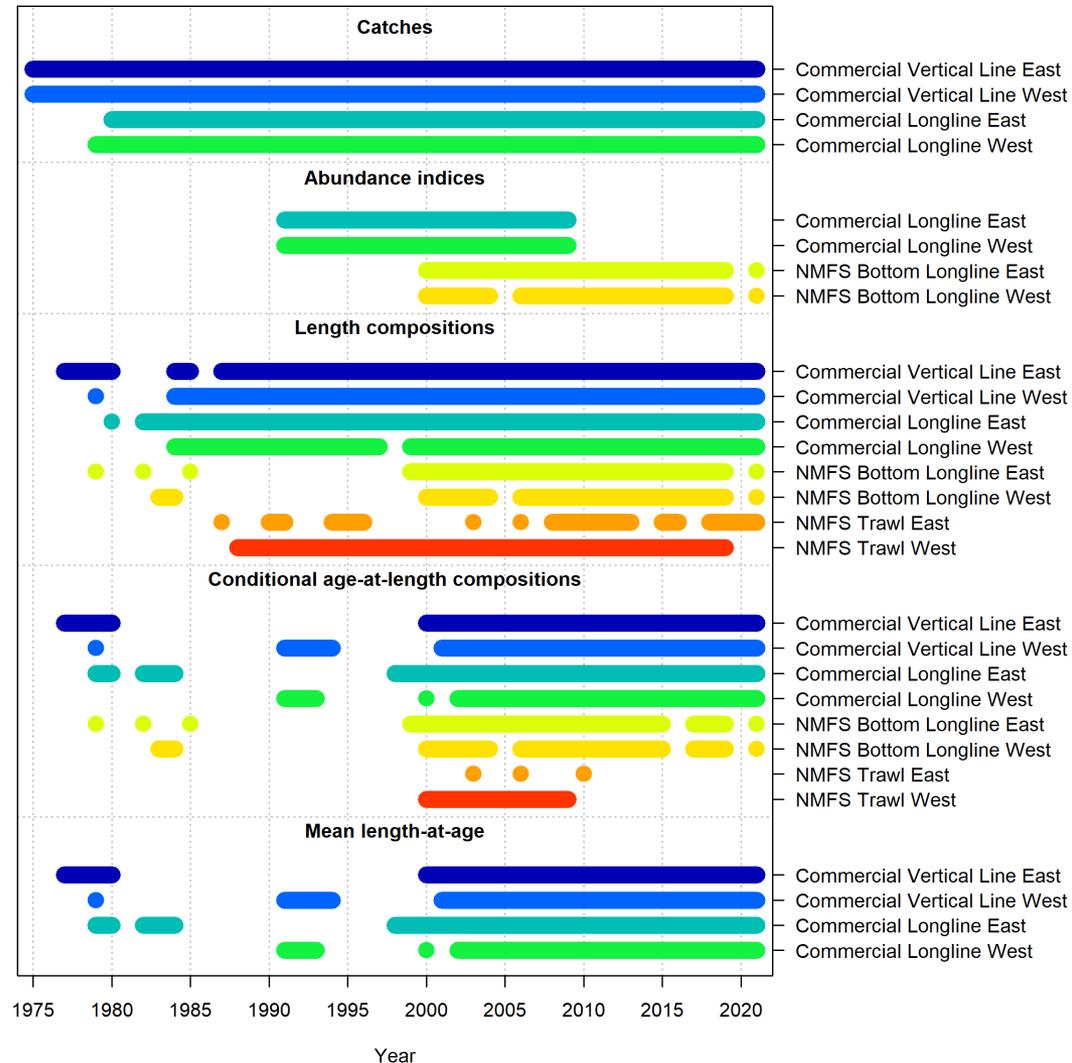
Operational Assessment Check-in

GMFMC SSC Meeting

July 19-20, 2023

We have a continuity model running, but…

- SEDAR 22 (2011) was the first Stock Synthesis model developed at the SEFSC

- Since then, we have:
  - 12 years of new data
  - Numerous data extraction and QA/QC improvements
  - Updates to our best practices

Difficulties producing a true continuity model

Treatment of landings

- SEDAR 22 model configured to fit to landings exactly

- Multiple competing models were produced including a "low landings" scenario (early 1980s Longline)

We know landings are uncertain due to:

1. Species misidentification (yellowfin vs yellowedge)
2. High landings of unclassified groupers
3. Assumptions used to estimate pre-1986 landings

# Difficulties producing a true continuity model

Composition data inputs and fitting

- Sex-specific length and conditional age-at-length compositions were fit to in the SEDAR 22 model
  - Sex determination based on both histological (recommended) and macroscopic identification (less accurate, and used previously)
  - Most years/areas do not meet current sample size cutoffs (30 lengths or 10 trips)
- Data inputs have changed between assessments
  - Sample sizes have changed considerably for some fleets
  - Years of data submitted have changed in some cases
  - Sex assignment for some samples has changed

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Difficulties producing a true continuity model

Hermaphroditism

- Modeled as the proportion of individuals transitioning at a given age using a scaled cumulative normal distribution
  - Asymptote of 1 if all females have transitioned by the plus group

- Can be estimated in Stock Synthesis
  - Sex-specific data limited, especially if assigned histologically

SEDAR 22 model estimates that only 7% transition by age 40?

Plus group
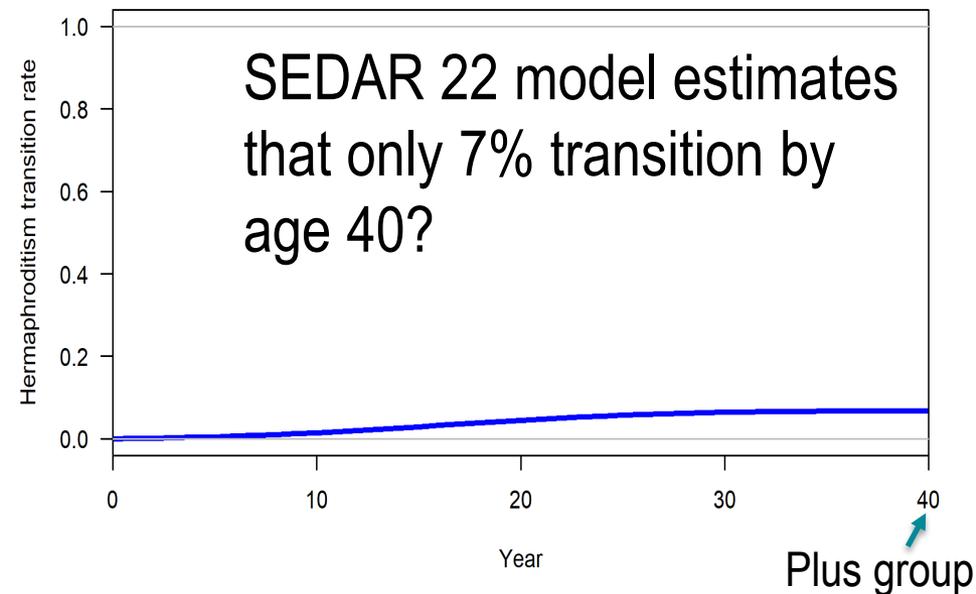
Proposed changes to model configuration

1. Use landings as provided based on updated methodologies
    - Commercial improvements, MRIP-FES

2. Switch F method and incorporate uncertainty in landings
    - F as parameters approach commonly used for Gulf reef fish
    - Including annual uncertainty estimates where possible

3. Remove sex-specific composition data and use as provided based on updated methodologies and QA/QC
    - Need to develop compositions for all data combined (male, female and unknown sex) – requires some extra time

SEDAR 22 model comparison

- Re-ran SEDAR 22 model with new data/configuration

- Largest difference when using SEDAR 85 compositions

  - More years of NMFS Groundfish trawl data provided, which are younger yellowedge grouper

SSB units are metric tons of mature male and females
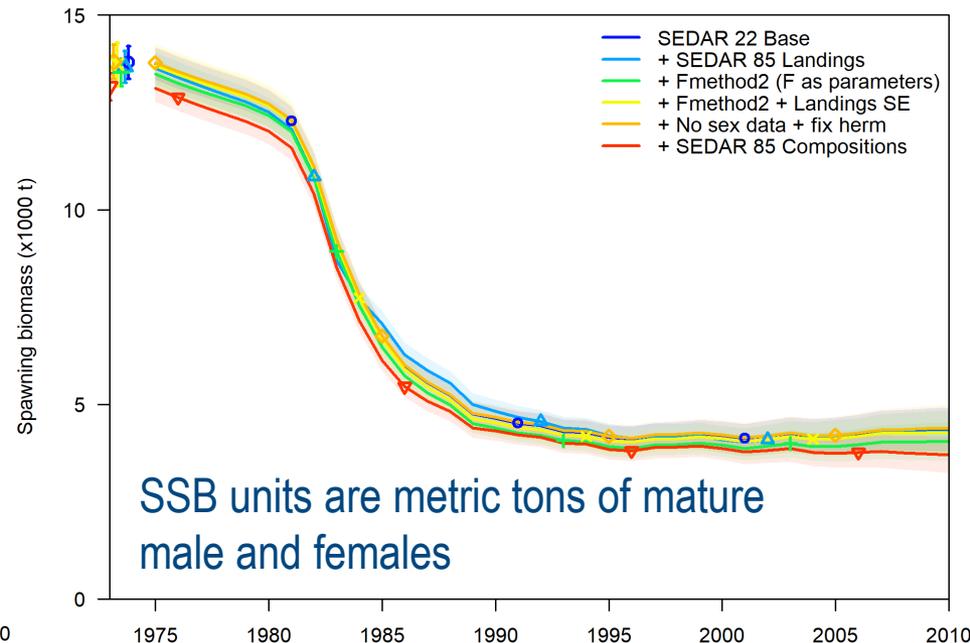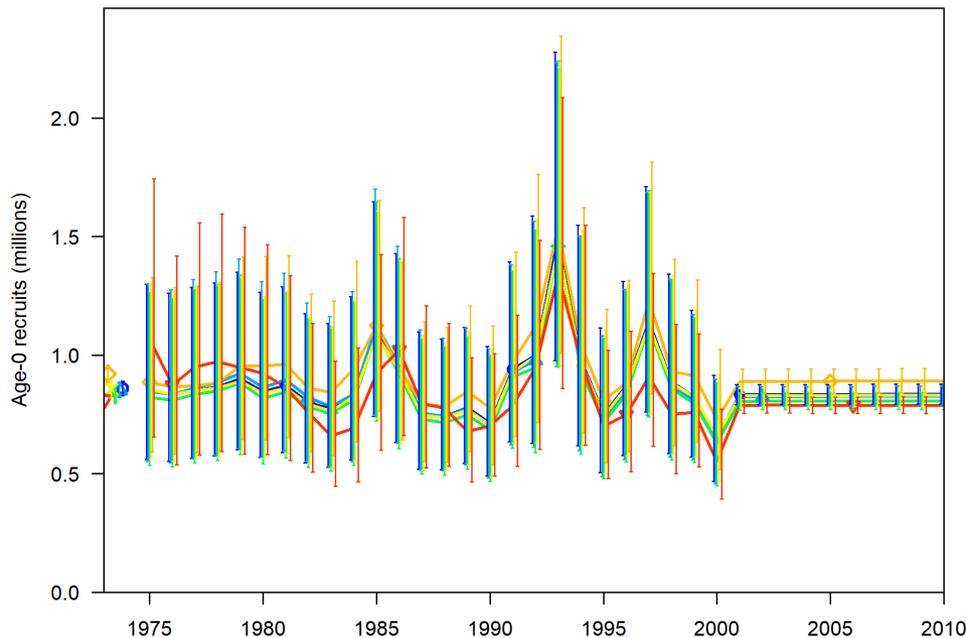
SEDAR 22 model comparison

- Noticeable difference in F when using SEDAR 85 landings
  - Different methodology used to fill in landings from 1982-1985

- Incorporating uncertainty better reflects fishing history
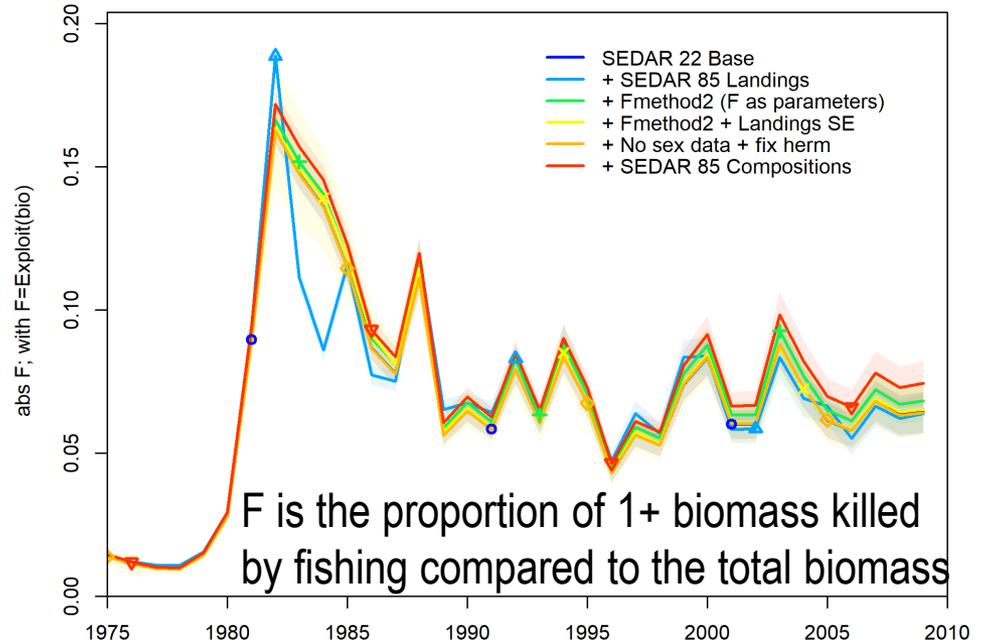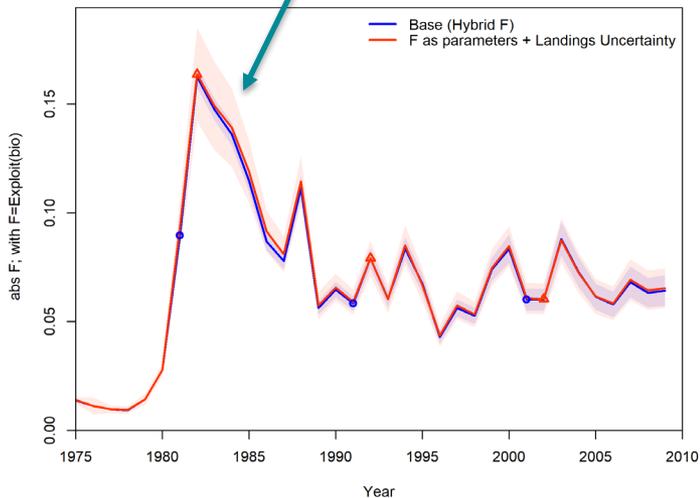
Next steps

1. Do you agree with our proposed changes?

2. **Data needs**:

   • Length compositions weighted by landings so best practices for composition data are followed

3. **Process**:

   • Should these changes be reviewed by an ad-hoc panel or should we proceed as planned for SSC review?

4. **Report:**

   • Will include more tables/figures similar to the Gulf Scamp report than an operational (given large number of changes)

Questions?

Thank you for your attention!

SEDAR 85 Schedule

TORS and Schedule Approved..March 2022

Deadline for Management History ....July 1, 2022

Deadline for Unprocessed Data (raw, edited and QA/QC'd age & length data)............27 January 2023

Deadline for final MRIP, SRHS, and Commercial Landings Data ....5 May 2023

Deadline for submission of final analytical products ....2 June 2023

Working paper submission to SEDAR Staff ....14 July 2023

Assessment Report to SEDAR staff: .... 11 September 2023

Complete Assessment Report Submitted to Council:... 15 September 2023