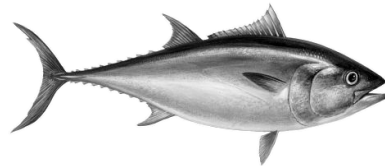
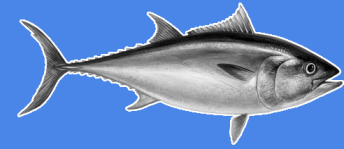


# PRELIMINARY RESULTS OF THE 2022 VPA STOCK ASSESSMENT OF EASTERN ATLANTIC AND MEDITERRANEAN BLUEFIN TUNA



T. Rouyer, A. Kimoto, R. Zarrad, M. Ortiz, C. Palma, C. Mayor, M. Lauretta, E. Rodriguez-Marin and J. Walter

# INITIAL MODEL SETUP



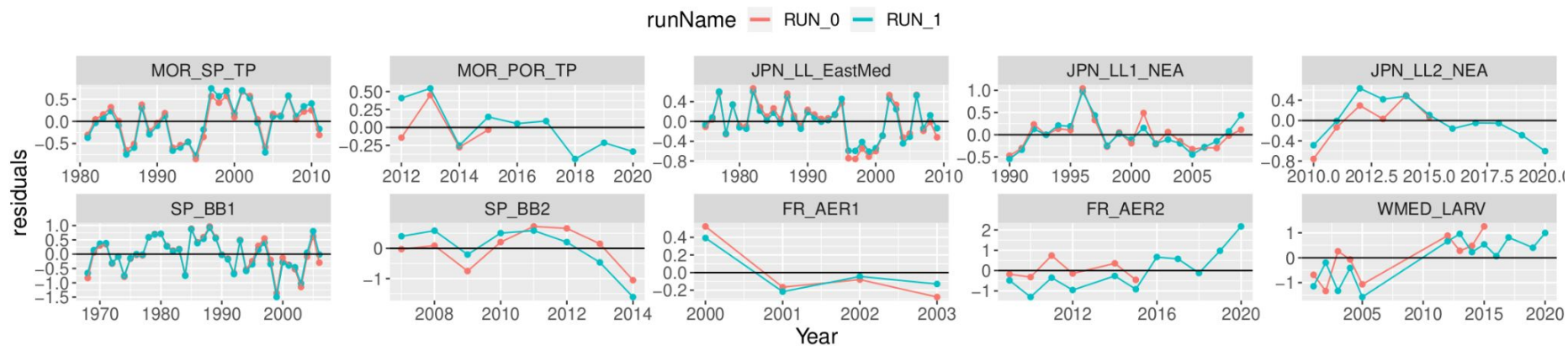
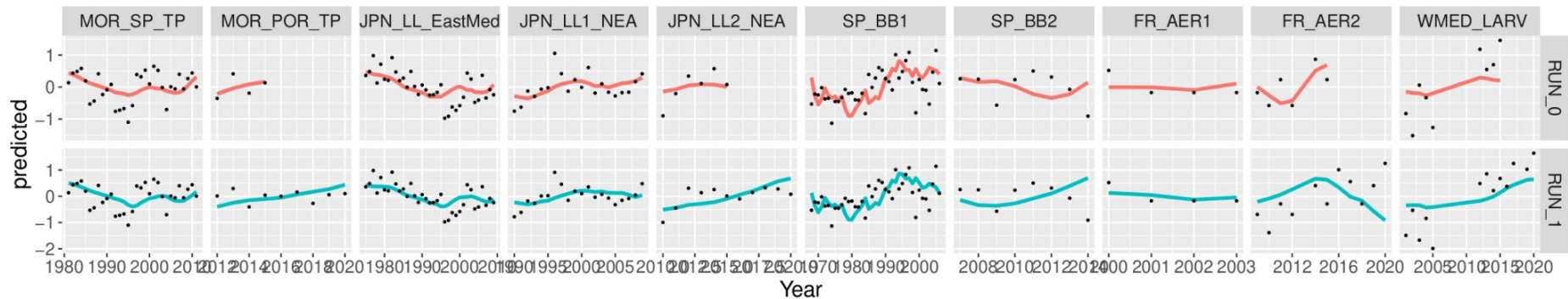
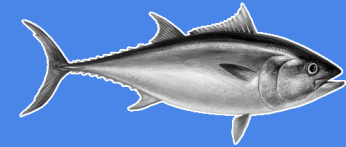
## No new set-up was agreed on in 2020

- 2022 Model setup = 2020 RUN 84 = 2017 base case (Run 0)

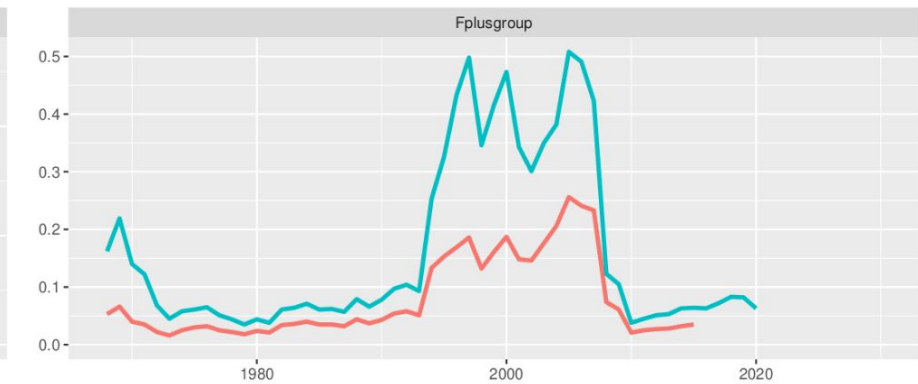
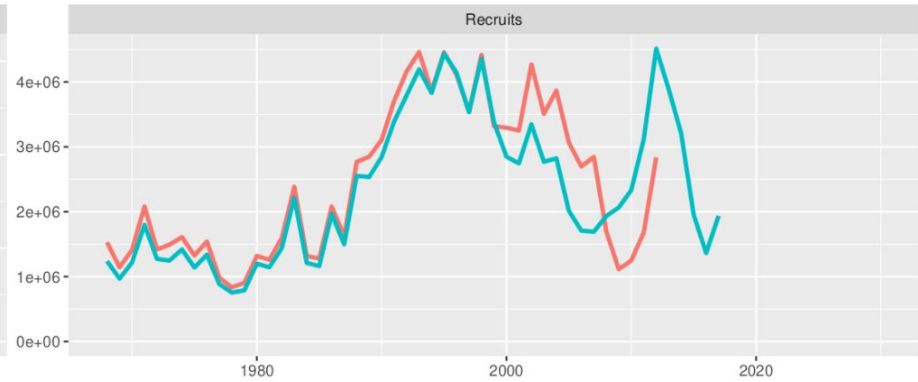
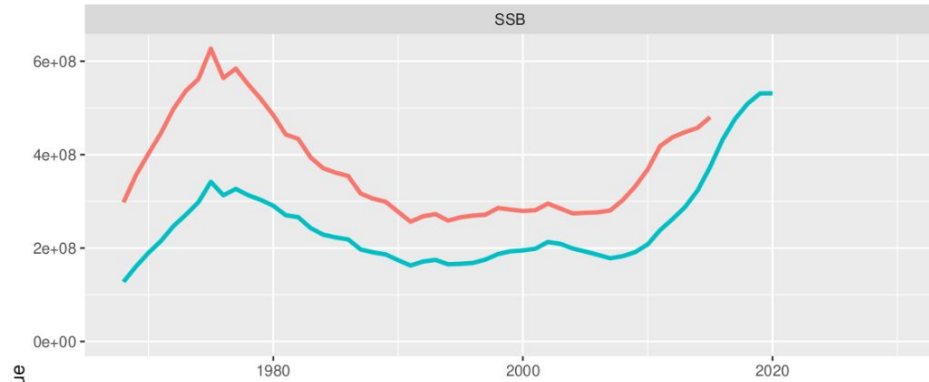
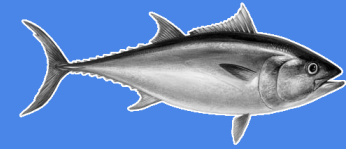
## The model specifications:

- Age 10 as plus group
- Maturity ogive (Ages 1-10): 0; 0; 0.25; 0.5; 1; 1; 1; 1; 1; 1
- Constraint on vulnerability: penalty of 0.4 on the last 3 years for ages 1 to 9
- No penalty on recruitment
- No constraint on spawner-recruit relationship
- Terminal Fishing mortality at age (1-9) of population freely estimated
- F-ratio estimated by time blocks for 1968-1980, 1981-1995, 1996-2007 and fixed to one for 2008-2020.
- Natural mortality (Ages 1-10): 0.38; 0.30; 0.24; 0.20; 0.18; 0.16; 0.14; 0.13; 0.12; 0.1
- The variance scaling for the indices (i.e. weighting) freely estimated, but same variance for both Trap indices, same variance for the three Japanese longline indices, same variance for the two Baitboat indices

# CONTINUITY: FIT TO CPUE

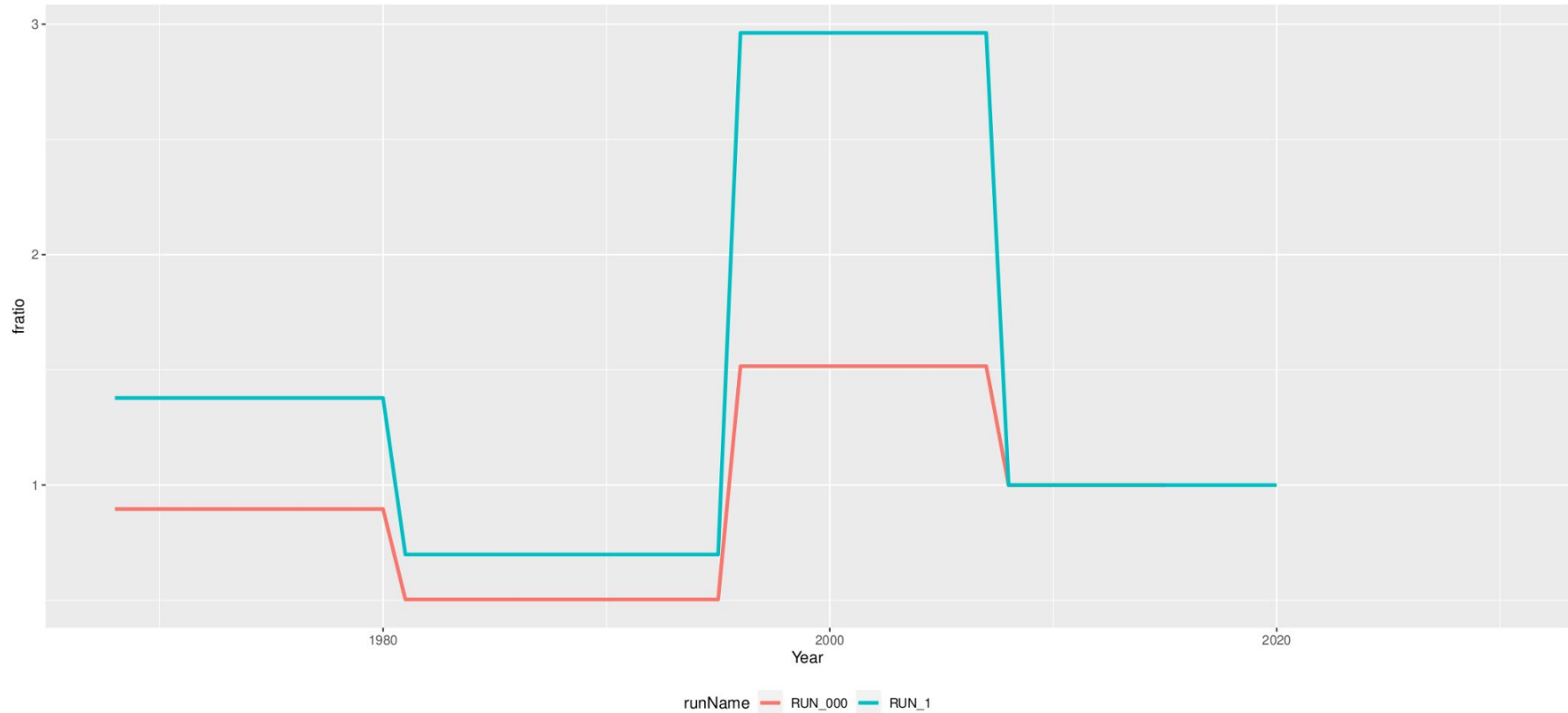
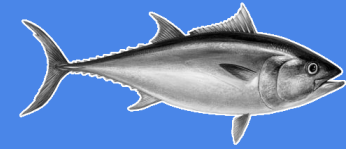


# CONTINUITY: TRENDS

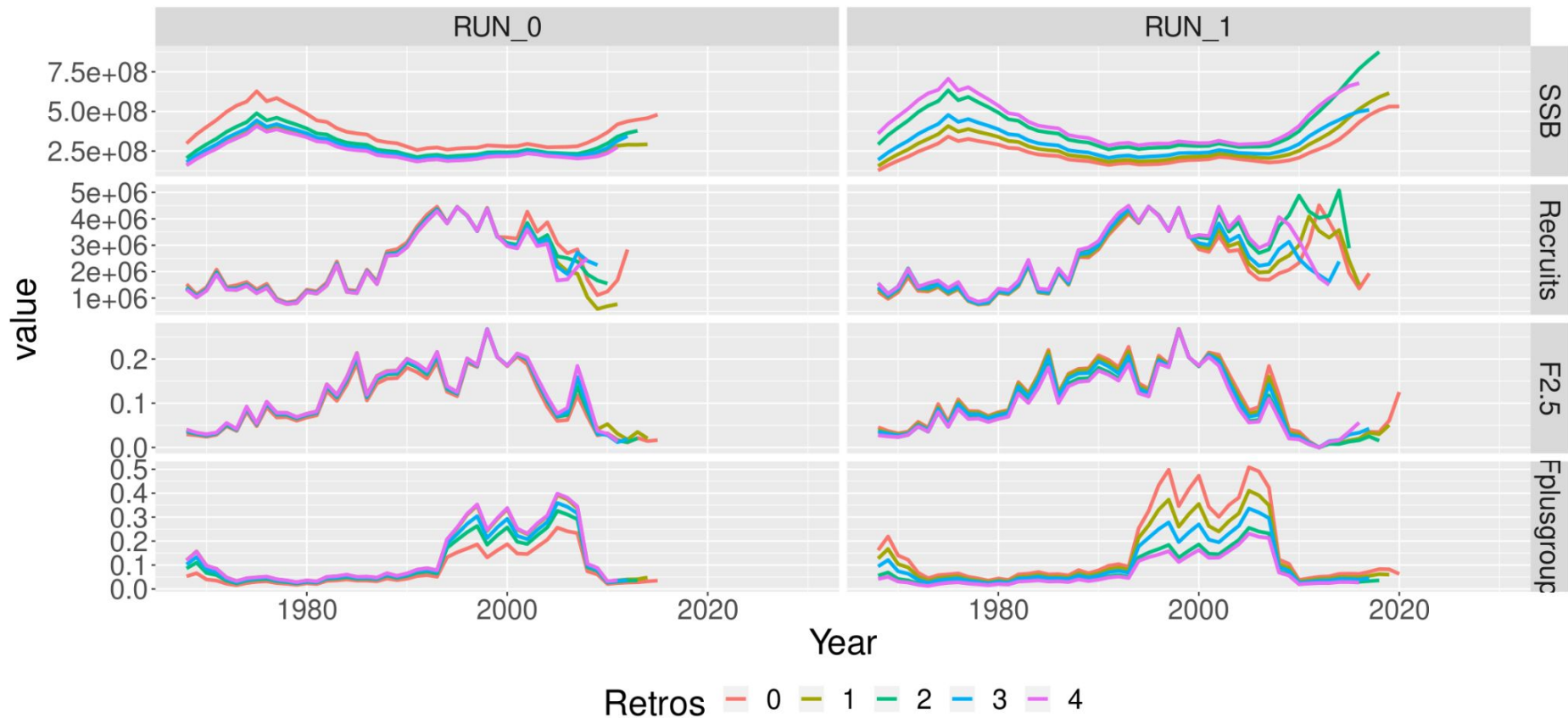
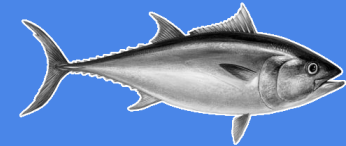


runName RUN\_0 RUN\_1

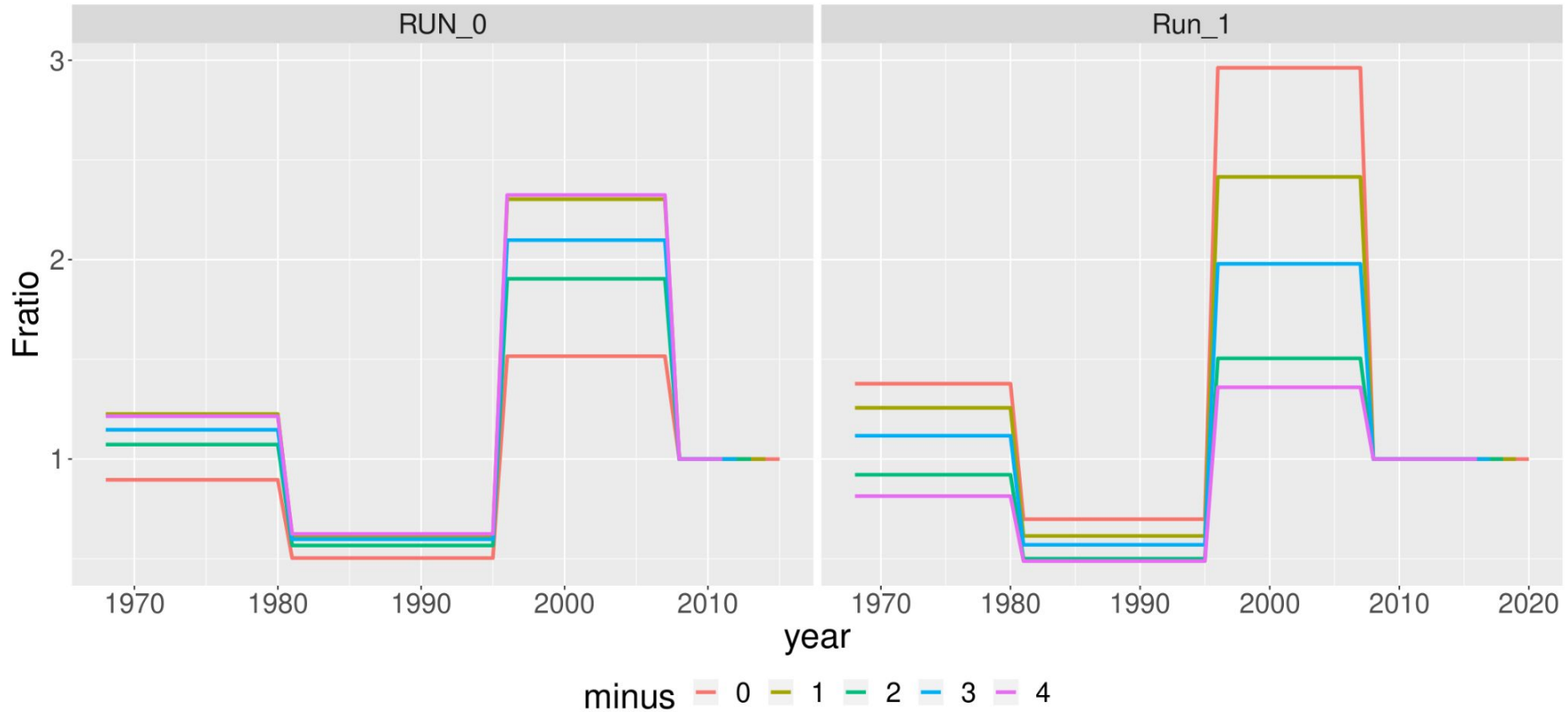
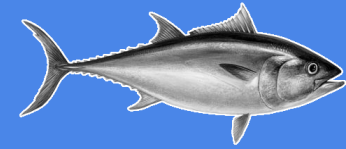
# CONTINUITY: Fratio estimates



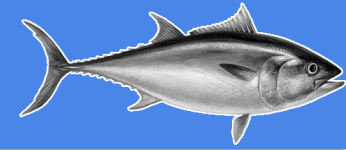
# CONTINUITY: RETROSPECTIVES



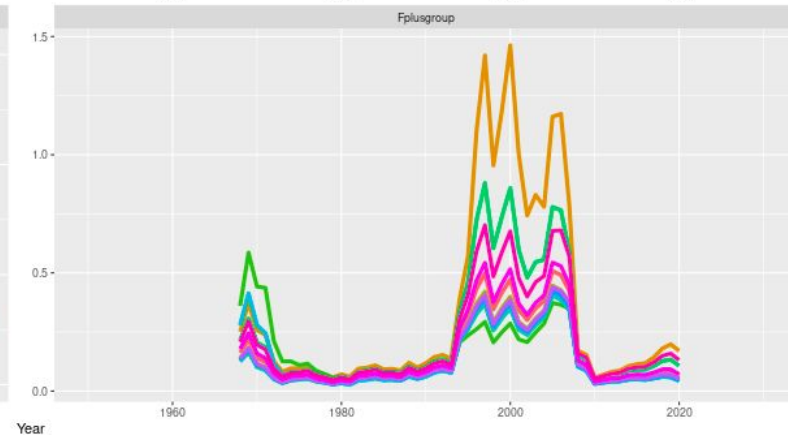
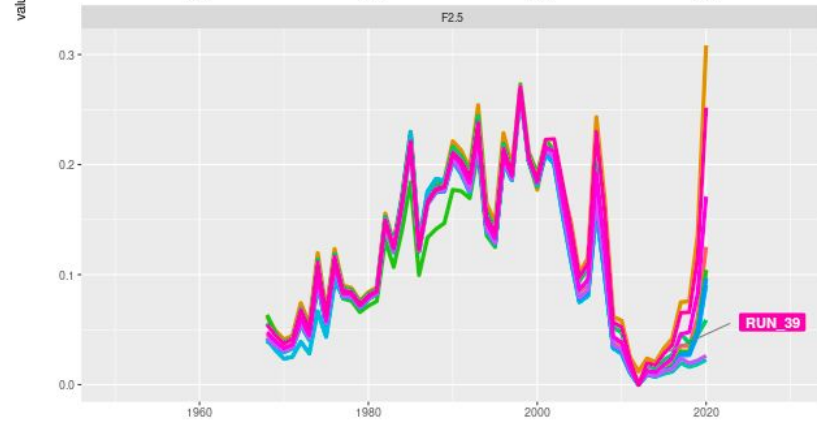
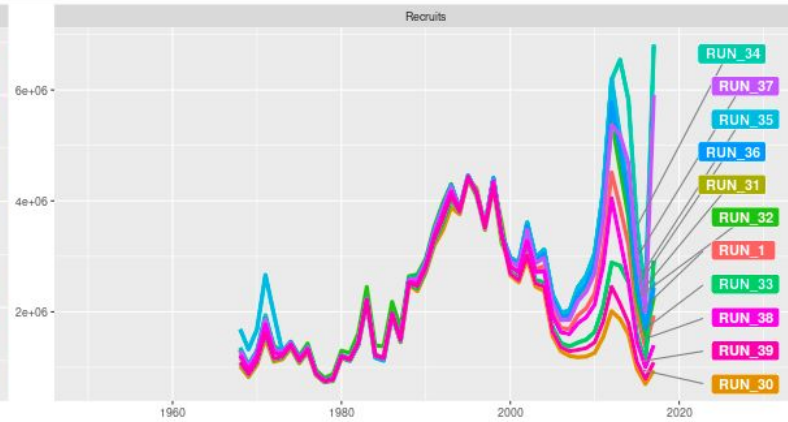
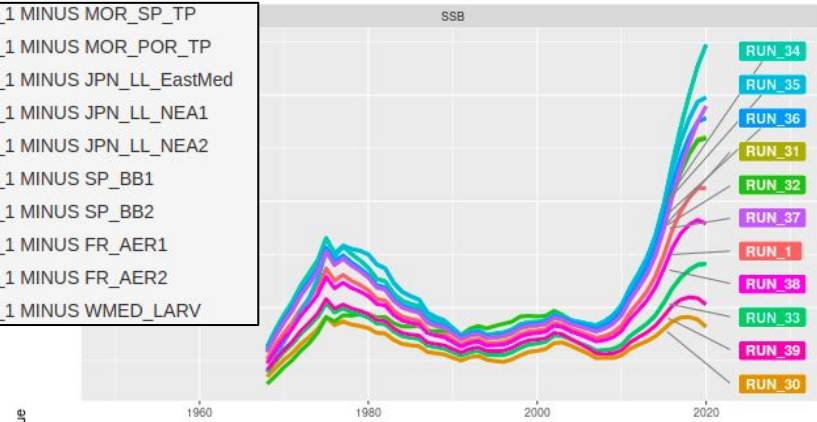
# CONTINUITY: RETROSPECTIVES



# CONTINUITY: JACKKNIFE

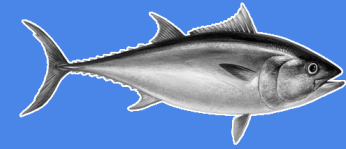


RUN\_30 JACKKNIFE ON RUN\_1 MINUS MOR\_SP\_TP  
RUN\_31 JACKKNIFE ON RUN\_1 MINUS MOR\_POR\_TP  
RUN\_32 JACKKNIFE ON RUN\_1 MINUS JPN\_LL\_EastMed  
RUN\_33 JACKKNIFE ON RUN\_1 MINUS JPN\_LL\_NEA1  
RUN\_34 JACKKNIFE ON RUN\_1 MINUS JPN\_LL\_NEA2  
RUN\_35 JACKKNIFE ON RUN\_1 MINUS SP\_BB1  
RUN\_36 JACKKNIFE ON RUN\_1 MINUS SP\_BB2  
RUN\_37 JACKKNIFE ON RUN\_1 MINUS FR\_AER1  
RUN\_38 JACKKNIFE ON RUN\_1 MINUS FR\_AER2  
RUN\_39 JACKKNIFE ON RUN\_1 MINUS WMED\_LARV









## Indices

- GBYP aerial to be included (which ones, how, same as WMED\_LARV) ?
- Update of WMED\_LARV (included in MSE) ?

## Problems with Fratio -> instability

- Try to lock values ?
  - Try historical values (2017 assessment, 2014 assessment)
  - Explore 1 and only estimate for 1996-2007 (VPA manual: typically the values are fixed to 1.0 unless there is some compelling biological reason to suggest otherwise)

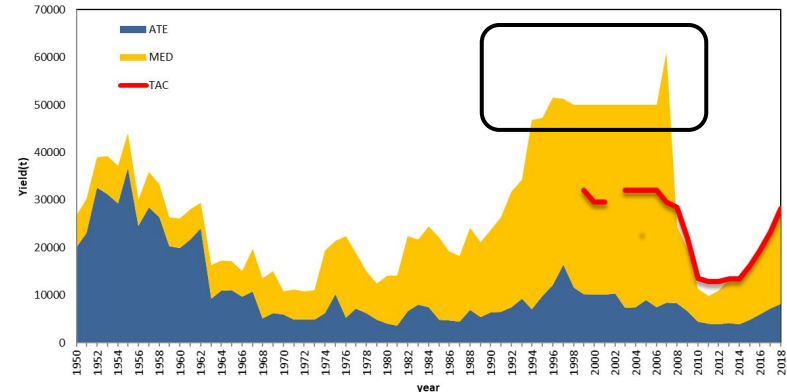
## Problems with CAA (and specifically 1996-2006)

- Sensitivity using CAA from SS3
- Lock Fratio for the whole time period but for 1996-2006

## Explore wider age-structure

- Extend to Age16+
- Easier to assume Fratio=1
- But modeling subgroup found it problematic

BFT-East Atlantic stock (Task-I) by region



Thank you

