

SEDAR 41: South Atlantic Red Snapper and Gray Triggerfish  
Post Data Webinar Summary  
August 15, 2014

## General Information

### *Data, Workshop Report & Working Paper Deadlines*

- **Aug 22, 2014: FINAL data due to compilers**
- **Aug 22, 2014:** DW report drafts distributed to panel for review
  - WG leaders/designees – send draft sections to Julia and she will distribute to panel
- **Aug 27, 2014:** DW working papers finalized and to Julia
  - Please notify Julia if paper finalized
- **Aug 29, 2014:** Comments on DW report sections to work group leaders/editors
- **Sept 5, 2014:** Final sections of DW report to Julia
- **Sept 12, 2014:** Final DW report distributed to DW and AW

**\*\*\*Until Gray Triggerfish (GTF) ageing issue is resolved, some of the data and report sections for GTF cannot be finalized. All of the data and report sections that do not rely on the age data need to meet the above data deadlines.\*\*\***

### *Upcoming Webinars*

- **Sept 11, 2014 at 9am:** Post DW Webinar II
  - If necessary to resolve GTF ageing issues
- **Sept 26, 2014 at 9am:** Pre-Assessment webinar
  - Will include DW and AW panel

## Commercial Working Group

- Length and age comps still being compiled; likely will be an AW working paper
- Shrimp bycatch estimates for GTF
  - Observer data only identifies GTF to species during 'species characterization' trips; occurred from 2001-07; higher GTF observations earlier in time series; exploring data to see if there is a reason for this disparity
  - Recommendation from DW still stands
    - Insufficient data to model shrimp bycatch in the assessment
  - Commercial WG will further explore the observer data to see if it is possible to indicate whether there is insufficient data because shrimp bycatch is minimal or if there was inadequate sampling to characterize; panel will be able to review language on this topic in draft DW report
  - Both red snapper and gray triggerfish are extremely rare in SEAMAP survey
- Red snapper discards
  - Recommendations from DW did not change (see below); panel reviewed final discard estimates
    - Use nominal discard rates

- Calculate discards separately for open and closed seasons (will have open and closed season estimates for 2010, 2012, and 2013 – when there were closures in the fishery)
  - Use 2002-2009 (years with discard data and no fishery closures) to determine the mean discard rate for calculating 1992-2001 discards (years with effort but no discard data)
- Analyst asked for group to provide information on whether or not data are available regarding hook size (and if available, details about data) in report; could potentially be used to help inform selectivity; may be some commercial observer data available on hook type

### **Indices Working Group**

- At workshop didn't have time to review uncertainty estimates for the indices; these estimates have now come in
- HB index for red snapper has very large CVs; exploring why CV's so high and trying to resolve (since webinar – issue has been resolved)

### **Recreational Working Group**

- Writing language for report
- Working on age and length comps
- Working on uncertainty for the various data sets
- Analyst asked for group to provide information on whether or not data are available regarding hook size (and if available details about data) in report; could potentially be used to help inform selectivity; FL has information on hook size/type from headboats and charter boats; B. Sauls can provide data and will include language in report

### **Life History (LH) Working Group**

- LH WG had call on Thursday (8/14) to prep for webinar

### ***Red Snapper (RS)***

- Age error matrix – not complete yet, but should be done by deadline
- Reproduction
  - Reviewed analyses for proportion spawners by calendar age (showed SERFS, FL FWCC, and Fitzhugh data from SEDAR 31 Gulf of Mexico RS)
  - Proposal to combine spawning fraction data from SERFS and FL FWCC – to get proportion spawning by age class for assessment team to consider as way to scale maturity ogive to get number of 'active' spawners
  - Will be using egg production/fecundity as measure of spawning stock
  - FL study did not find size or age to have significant effect on the proportion of active spawners; season may be a confounding factor; study did not have many larger, older samples
  - Statistical tests have not been run on SERFS data to see if significant difference
  - Based on above information, model will either need average spawning fraction for population or age specific spawning fractions

- Panelist asked whether fish were not spawning every year; it's a possibility, but this should be incorporated into the proportion spawning analyses
- Noted that there are some spawners in the age 1 fish (small sample size); concern if need to account for what happens at age 1
- D. Wyanski and S. Lowerre-Barbieri will discuss further and develop a recommendation for either an average spawning fraction for the population or age specific spawning fractions (if do age specific, will likely need to use age blocks); panel will get to review recommendation via draft report section; if LH group receives many comments about recommendation can discuss again as group; (David and Sue have discussed since webinar; final analyses should be complete 8/25)
- Natural mortality
  - Scaling age varying estimates of M have been considered in the past because get unrealistically low cumulative survival at max ages for many long lived fish; originally done in SEDAR 4; typically scaled to a point estimate based on max age (Hoenig 1983) to provide a plausible survival to max age
  - At DW, selected Charnov curve as most appropriate; without scaling cumulative survival of fully recruited ages (age 4+) = 0.0006%; with scaling to Hoenig point estimate cumulative survival of fully recruited ages = 1.4%; LH group felt scaled estimate more biologically realistic
  - **Recommendation (did not change from DW): use age-varying Charnov et al. method scaled to Hoenig (all taxa) point estimate (M=0.09);** consistent with SEDAR 24
  - Proposed sensitivities
    - Use scaled Charnov method with fixed scaling of Hoenig to produce cumulative survival of 0.5% and 5% as a low and high value
    - Examine use of Hoenig (fish) point estimate to scale curve for alternate sensitivities
    - Analyst recommended using a range in the Hoenig estimate as another way to get potential sensitivities – will make symmetrical; could potentially look at variability around age estimates and use those for Hoenig estimates; LH group will discuss further; info. on proposed sensitivities will be included in report
  - Panelists asked about natural mortality estimates for age 0 and age 1; was noted that SEDAR 31 used higher estimates for these ages; in Gulf of Mexico these estimates determined using data that are not available in the South Atlantic
  - Analyst asked that information be included in the report on how the full age of recruitment was determined and why it was included in the model; full age of recruitment was determined using the fishery dependent age data and believe used the mode + 1; will confirm and include language in report
  - Analyst asked additional question about the rationale of scaling to age of selectivity; reason based on Hoenig sampling which was based off of fully recruited individuals; asked about possibility of scaling based on shift in life history (habitat, predation, etc.) instead of recruitment to fishery; LH group will look into and provide text in report on information available

- Outstanding tasks: adequacy of parameters, sensitivity ranges, South Atlantic and Gulf of Mexico comparison, and completion of draft report

#### *Gray Triggerfish (GTF)*

- Gape and hook size – no additional recommendations; information not sufficient to use in analyses; add research recommendation
- Age error matrix – not complete yet, completion will be dependent on GTF ageing decision
- Natural Mortality
  - At DW consider Charnov and scaled Charnov (reason to use scaling same as with RS)
  - Post –DW look at cumulative survival for gray triggerfish for both methods; unscaled method get cumulative survival of fully recruited ages (age 4+) = 0.8% - very close to 1%; LH group felt unscaled estimate gave cumulative mortality estimates that were biologically realistic
  - **Recommendation: use unscaled age-varying Charnov et al. method; CONTINGENT ON RESOLVING AGE ISSUE**
  - Proposed sensitivities: adjust each increment +/- CV based on bootstrapping of individual increment counts to obtain high and low estimates
- Reproduction
  - Examined Lang & Fitzhugh (2014) paper more closely
  - Methodology differences – Ingram (2001) based on histology, included larger size oocyte in counts; Lang and Fitzhugh based on whole oocyte, included smaller oocytes in counts based on determination of group synchronous oogenesis
  - **Recommendation: use batch fecundity vs. Fork Length equation from Lang & Fitzhugh (2014) as proxy for fecundity**
- Ageing – increment vs. age
  - From data webinar and DW – recommendation to use increments not age; working document with GTF reproductive information available prior to workshop
  - Maturity ogive predicts ~68% of increment 0 fish are mature; LH group feels that the mature increment 0 fish were not spawned that season (NOT YOY fish); many of the mature increment 0 fish are larger in size and likely would be age 1 fish if could convert to age
  - Panelist noted in SEDAR 32 (used calendar ages) 0% mature at age 0 and 63% mature at age 1; age 1 maturity similar to increment 0 (68%); large majority of increment 0 would probably be age 1 if possible to address increment to age conversion
  - Original recommendation from DW: use length at maturity and convert to age using growth model (BAM model requires age at maturity)
  - **Issue:** BAM model will interpret increment 0 as age 0; bias comes when model thinks increments are ages – increment 0 = mix of age 0 and 1, increment 1 = mix of age 1 and 2, etc.; always biased by having older fish included in an increment ‘age’, so maturity curve is biased high when based on increment count; increments need to be adjusted to coincide with maturity ogive that will be provided; analyst noted that if increments are converted to ages will need to be done for all ages, not just age 0.

- J. Potts and others will be running analyses for LH group to reconsider if conversion from increment to age is possible
- Panelist noted logistic model not appropriate to determine maturity for some species, may be case for GTF; may be better to do proportion mature at increment count; was done for South Atlantic BSB assessment
- Panelist noted can set maturity at increment 0 = 0% and leave maturity ogive as is; analyst indicate this would cause bias if didn't adjust other increments; potential consequence of using increment count
- Panelist asked if it was possible to use age at 100% maturity as way to address this issue
- Panelist asked if possible to do sensitivity – average age 0 and 1 and get different bound for age 1?
- **Approach 1:** use increments, use length based maturity ogive and covert to age using growth curve (also discussion of using proportion mature at increment count instead of logistic model), adjust maturity of increment 0 (set = 0)
  - Analyst noted that if use increment count for all ages and model assumes these are calendar ages, it would impose a source of error in model; if assume 0% mature at increment 0 and use increments – model could run, but would need to acknowledge that this provides a source of uncertainty or potential bias in assessment
  - Panelist noted the LH WG will discuss the rationale of possibly replacing a series of assumptions (with associated bias/ uncertainty) by using increments, with another set of assumptions (with its associated bias/uncertainty) by using converted ages.
- **Approach 2:** adjust increments to ages; more analyses need to be completed and discussed to determine if this is possible; will have to make assumptions to do this so will have uncertainty here too
  - Analyst noted that know using increments will produce bias; think this approach will help correct for bias, if possible to make conversion
- **Next steps:** LH group will complete analyses and develop recommendation for age issue; many LH group members will be unavailable the next two weeks; LH group will have call week of Sept. 1<sup>st</sup> to discuss; webinar will be held Sept. 11 for full panel discussion
- Outstanding tasks: ageing issue (depending on decision may require rerunning all analyses dependent on age); adequacy of parameters, sensitivity ranges, South Atlantic and Gulf of Mexico comparison, and completion of draft report.

**Attendees:**

Neil Baertlein	Peter Barile	Ken Brennan	Russell Brodie
Walter Bubley	Rob Cheshire	Chip Collier	Jack Cox
Julie DeFilippi	Charles Driggers	Amy Dukes	Mike Errigo
Nick Farmer	Eric Fitzpatrick	Kelly Fitzpatrick	Dawn Franco
Cameron Guenther	Frank Helies	Eric Hiltz	Rusty Hudson

Jimmy Hull  
Kevin McCarthy  
Marcel Reichert  
Kyle Shertzer  
Byron White

Amanda Kelly  
Barbara Muhling  
Beverly Sauls  
Kate Siegfried  
David Wyanski

Sue Lowerre-Barbieri  
David Nelson  
Christina Schobernd  
Tracey Smart  
Julia Byrd

Vivian Matter  
David Parshley  
George Sedberry  
Andy Strelcheck