



Atlantic States Marine Fisheries Commission

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Atlantic Menhaden Stock Assessment Subcommittee and Technical Committee Conference Call Summary

March 13, 2014

SAS/TC Members: Amy Schueller, Joe Smith, Matt Cieri, Jeff Brust, Alexei Sharov, Lindsey Staszak, Josh Newhard, Behzad Mahmoudi, Todd Mathes, Derek Orner, Kurt Gottschall, Joey Ballenger, Micah Dean, Jason Schaffler, Ellen Cosby, Scott Newlin

ASMFC Staff: Mike Waine, Genny Nesslage, Shanna Madsen, Marin Hawk

Public: Mike Prager, Ron Lukens, Will Smith, Benson Chiles, Greg Wells, Jeff Kaelin, Andre Buchheister, Erik Williams, Mike Celestino

1. Fishery dependent indices (Micah)
 - a. Filter data (positive tows and consistent permits across time series)
 - i. If months with no pos obs, they were dropped (really just MA and was limited to April-June then); NJ restricted to DE Bay and dropped ocean, MD dropped any with no obs of menhaden, also restricted NJ mesh size to narrower range
 - ii. MA/NJ/MD didn't change much with additional filtering. In MD <5% filtered out too much, so used >25% had to be positive for each permit. PRFC similar too when months dropped out.
 - b. NJ gillnet gear saturation examination
 - i. For all permits and limited permits (4-5), saw increasing catch rate with soak time, saturates at 4.5 hrs, then decreases up to 24 hr. Most obs at 24 hrs. Jeff will ask more questions about nature of this fishery. Will look into reporting accuracy, check with fishers and ask if they notice gear saturation, and ask how long they typically soak if targeting menhaden. This is a mixed species fishery, but at certain times of the year they target. Longer soaks might be targeting mixed species, shorter soaks are targeting schools of menhaden possibly.
 - ii. Tried including soak time as factor two ways - <5hr and only 24hrs. If throw out 24 hr mode of fishing, most of dataset is gone.
 - iii. Tried to limit to one level of soak time.
 - iv. If targeting menhaden with shorter soak times you may be less likely to track abundance with this index. Might be best to use 24hr.
 - v. This dataset highly correlated with MA index up north, tracks with juvenile abundance. Decided to keep it on list using 24 hr soak time index to avoid hyperstability and ensure more random sampling.
 - c. How important are zero trips in PRFC lb net index? Use long time series if 20% zeros doesn't affect index much. Monthly vs. daily (which includes zeros)
 - i. Similar trend in both. Which to use? Limited time series with zero catches or use longer time series with no zeros.
 - ii. Decided to use longer time series that included monthly reporting.
2. Fishery independent indices (FIG) update (Amy)
 - a. Compiled list of datasets included/excluded with justification.

- b. Drafted description of overall methodology in standardization.
 - c. Created template for documenting each index.
 - d. Will finish all indices once have 2013 data and will finalize by April 1st. Amy will do workup comparison across indices.
 - e. Joey will get aerial extent measurements and we'll use that to generate regional/coastwide indices. Send to Genny and/or Joey by March 31st if you haven't done so already.
3. Alternative FAA based on LAA (Alexei)
- a. Currently using exponential function of fecundity based on FL
 - i. Population fecundity = sum of age classes
 - ii. Eggs per age class = #F*average FAA
 - iii. FAA = mean SAA and plug into FAA function
 - iv. Assume SAA is normally distributed within each age group
 - v.
 - b. Evaluation of bias
 - i. Calculate individual FAA, sum across age, compare with current method
 - ii. %difference ranges from 2-6% for ages 2-6
 - iii. Thus, not important in our case
 - iv. Given our high total mortality (~2) and applied it, resulted in only ~2% difference minor bias. Can safely ignore small amount of bias because effect small and only really used as proportion in ref pts.
 - v. Did not investigate individual FAS, but not expected to have an affect on assessment.
4. Maturity (Amy)
- a. >240,000 records on maturity found at Beaufort, 1955-1970, include sex/age/other time&plant info
 - b. Little difference in maturity between males and females
 - c. Used Sept-Jan records to match NEAMAP and when in main spawning grounds, included some DE&NJ plants as well, used all years and calculated maturity at age curve
 - d. Matches NEAMAP curve almost exactly!
 - e. Decided to use these found samples-based curve because they are actually ages (vs. NEAMAP) vs. a translated from LAA like NEAMAP, but put NEAMAP in report as corroborative evidence.
 - f. Huge range of uncertainty if you plot the range of each yearly curve. Most cluster around curves for ages 2-3. Decided that uncertainty by year effect will be incorporated into uncertainty estimation in assessment.
 - g. This variability could be due to ageing error & measurement error.
 - h. Are low points outliers or truth. If cohort-based argument is true, then include as truth. If outlier, then
 - i. Decided to look more at yearly curves, autocorrelations between ages, compare variability with WAA and LAA. Will make final decision on AW.
5. MSVPA/M (Matt/Mike Celestino)
- a. Update on model update
 - i. More examination of model inputs incongruence. Diet composition prediction very different from past updates and resulting M2s are very different – unrealistic results. Size selectivity a problem. Weakfish and sbass diet parameters are quite different if just use FH dbase vs. whatever Lance used (which we can't reproduce).

- ii. Still trying to fine tune model inputs/assumptions and hope to have M matrix by mid-April. But there is a chance we may not be able to produce realistic results in time for assessment. MSVPA may provide good estimates of trend, but not magnitude of M.
 - b. Backup plan
 - i. Age varying approaches line up mostly nicely. Biggest differences at ages 0-1. Charnov method produces highest age0-1 Ms.
 - ii. Can use age-varying scaled to tagging M
 - iii. Could use LH approach (e.g., Lorenzen or Charnov) for magnitude and allow for yearly variation based on best run of MSVPA. Still don't know what happened before 1982.
 - iv. Time-varying mortality likely given this is a forage fish. Use LH approach based on time-varying WAA.
 - v. Trend in MSVPA different from LH based time-varying approaches.
 - vi. Decided backup plan to using MSVPA matrix will be to use age- but not time-varying M from Lorenzen scaled to tagging.
- 6. Drone time (Joe)
 - a. Inshore drone time available this summer (March25-31) for us. Need FAA approval and paperwork needs to be done. Can fly for up to 2hrs, but FAA limiting to 1.5 hr. Can fly up to 1mi away from its support vessel. Has high res camera, can loiter over fish school. Cannot do traditional transect survey, but can possibly do a moving block design.
- 7. Don't forget:
 - a. If you haven't sent 2012 and/or 2013 landings, send them in ASAP. Finalize all bait by COB March 14th!!
 - b. Send bait samples to Beaufort ASAP!
 - c. Send area covered by your survey to Joey by end of March 31st.
- 8. Review items for next agenda (will send around doodle):
 - a. CBL/ODU review of study on otolith microchemistry and larval transport (Tom Miller)
 - b. Discuss method for combining surveys across regions/coastwide
 - c. Review CAA
 - d. Model development update
- 9. Public comment
 - a. Jeff Kaelin – in NJ gillnet fishery, you have two fisheries: 1) federal fishery reporting VTRs that is directed in fall (sell for \$1-2/piece); samples taken this year and sent to Beaufort. 2) DE Bay set gillnet fishery catch directly for pot bait, but haven't been reporting. Weren't required to report in past, so landings-based reporting guidelines resulted in them not meeting reporting requirements this time. Need to get reporting from the targeted DEBay fishery. Micah commented that DE Bay was only used in his analysis. Jeff said they are small-mesh gillnet fishery (exempted and required to report). VTR offshore data was examined, but there were too many changes in effort reporting requirements over time and was excluded from assessment because not deemed reliable enough. So question is - are they targeting or a mixed fishery. Lots of menhaden offshore the last few falls.
 - b. Mike Prager – Public comment too limited. Regarding M, document theoretical and technical underpinnings thoroughly. If only use non-targeted sets only in NJ gillnet fishery you could induce artificial trends if targeted species changes over time.