Rebuttal Letter – Jolthead Porgy manuscript

**Reviewer #1 comments.**

Line 72-83 – Since jolthead porgy is a minor species, its landings are not reported as an individual species in govt pubs such as Fisheries of the United State , published by NOAA Fisheries on an annual basis, but are instead aggregated into an ‘Other Porgies’ category. The only way to get at the individual species landings is to report the raw data from the various databases, as I have here, and attribute it to the various sources.

Fig 3. Good point! Green was probably not the best choice, and as a father of a son afflicted with red-green colorblindness, red probably isn’t either! You made me think. We have changed the color of the marks to yellow.

Line 245. Good point, added verbiage to line 158 in the methods , spelling out equation and defining the parameters.

Line 368-381. I eliminated the majority of this paragraph and moved the releavant parts of it to the suggested second paragraph in the discussion.

Further clarification of extent of spatial and temporal sampling. I am conflicted about this suggestion because we outlined the methods in the Methods section, and the reviewer is asking us to report sample totals (i.e. results) in the methods. I don’t agree with this, however I have seen it done in journals and so consent to move this portion regarding sample distribution to the first paragraph of the methods section. We do not feel a map showing locations of sample sizes within the two regions is necessary, the florida reef tract is large and the samples are widely dispersed, as is the fishing effort, with no major concentrations of catches of jolthead porgy in any one location. We would prefer not to have to create this map.

To the point of monthly sample sizes and the sampling gap between June and Sept, I did already address this on lines 207-209. This is not a seasonal fishery issue, the fishery is active year round, for some reason this particular species was just not caught in numbers during the summer months.

Line 105-106. I have addressed this comment by including the number of porgies by sex for those that were sexed by samplers, into the results reproductive section where they belong.

Line 126 – clarified transverse plane.

Line 147-147 – Addressed in age determination section of results.

Fig 1 – size of text boxes with sample size numbers in them were too small in some instances, thereby making some of the sample sizes look like a single number, I have corrected.

Line 162-167 – We feel we have adequately explained how we adjusted the calendar age with birth information to generate a monthly biological, or fractional, age. In this case, increment formation and birth occur at approximately the same time, so there is no lag time between them.

Line 211-212 – We did address the readability issue on line 229 where we present the low APE value of 0.06%. We had almost perfect one-to-one agreement between readers, and I don’t know how to emphasize that there was tremendous readability of these otoliths.

Investigation of demographic parameters by sex – I clearly state on line 70-71 that the species is a protogynous hermaphrodite, which means it begins its life as a female, and then at some point in its life, something triggers it to change to a male. The generation of sex specific growth parameters would be inappropriate and meaningless.

Line 305-306 – We would like to comment on depth but we have no discrete information on depth associated with these individual specimens. Depth information has not routinely been collected in recreational fisheries, and commercial fishermen usually supply a depth range, a maximum-minimum that may be for a day’s fishing or may be for a whole trip, so it is usually not reliable to use. We realize we may not have sampled the oldest and/or largest fish, and we clearly state this possibility on line 355 of the discussion.

Line 319-323.

Line 353-357 – Moved some of this text to the 2nd paragraph of discussion as suggested and deleted some other of it which I deemed unnecessary.

Line 385 – I changed ‘relatively easy’ to ‘remarkably easy’ to capture the flavor of the meaning you wanted to get across. In the context of the sentence structure, ‘one of the easiest annuli’ didn’t sound right.

Line 389 – The specific goals of the study were in fact to determine previously unreported life history demographic parameters, to the extent that we could, to aid fishery regulators in setting catch quotas for a species which previously had never been managed all that much, but that was required by the Magnuson Stevens Fishery Management and Conservation Act Reauthorization to have catch quotas set. I rewrote this section to try to clarify it, even as I disagree with the premise that this was a throwaway sentence.

Comments for the Author – This spurred me to add in an estimation of Z, total mortality rate, and F, fishing mortality rate, at the reviewer’s suggestion, thus I added in paragraphs into each of the methods, results and discussion.

**Reviewer #2**

Line 74-83 – Inserted new verbiage detailing thoughts on why there are limited commercial and private recreational landings from areas north of Florida, as well as results of a data query of the fishery independent sampling program showing virtually no jolthead porgy caught in traps in the Carolinas as far back as 1990.

Sample distribution issue within Florida. I have modified the observed/predicted size at age graph to show the origin of data points, between SEFL and the FL Keys. This clearly shows there is a mixing of points throughout the length distribution, and I have added verbiage in the text to this end.

Line 178-179;184-185 – I added some language to the discussion paragraph dealing with this issue, showing that the largest recorded jolthead landed was a good bit larger than our largest fish, and explaining that it certainly could be possible that our max age of 13 might be exceeded, but that we have no evidence of this from the literature, no one has done any biological studies on this species that we were able to unearth.

Line 194-199. I did indeed fail to include survivorship results in the results section, I had misplaced them in the discussion. I moved them to where they belong. We have included verbiage to state that survivorhip was estimated based on natural mortality only (i.e., without fishing).

Line 353-359 – these are good comments about excessive and long-term fishing pressure having likely truncated the age distribution of jolthead porgy, having an effect on the maximum age encountered, and I have incorporated a sentence into the manuscript to reflect that this is a possible bias maybe as important as location (deep-water).

Line 71. Hermaphroditism is mentioned, and we state in methods that gonads were macroscopically staged. This is usually adequate for determination of sex, but does not really allow for any determination of transition determination, as we need histological sections to be sure on this front. I have added a sentence to the reproductive seasonality methods section to emphasize this.

Table 1 comment regarding variances around predicted TLs. We have added the standard errors of the VB parameter estimates in parentheses besides the estimates in Table 2 for this study. This provides an estimate of variance for the growth equation and should allow an enterprising interested researcher to extrapolate predicted TLs should they desire.