Comments on SEDAR 36- Snowy Grouper standard stock assessment

The SEDAR 36 standard stock assessment for South Atlantic Snowy grouper indicated that the stock is still **"overfished"** but is currently **not undergoing "overfishing"** with respect to benchmarks produced in SEDAR 4 to achieve rebuilding of the stock. With updated modifications of both data and the model, where more accurate estimates of steepness and natural mortality were included, the SEDAR 36 model suggests a lower SSBmsy to achieve the rebuilding of the stock, and that increased sustainable fishing rates (Fmsy) and production (MSY) can be achieved during this rebuilding plan. It is clear, with strong statistical certainty of ~ 76%, that Snowy grouper is not undergoing "overfishing" and that fishing rate (F/Fmsy) is significantly under the sustainable (Fmsy) fishing rate that is permissible under the "rebuilding plan" targets for Bmsy and SSBmsy. Specifically, fishing removal rate is only 59% of the possible rate that still maintains the rebuilding trajectories to achieve "not overfished" status (i.e. SSB/SSBmsy and B/Bmsy are = 1).

Problems with SEDAR 36:

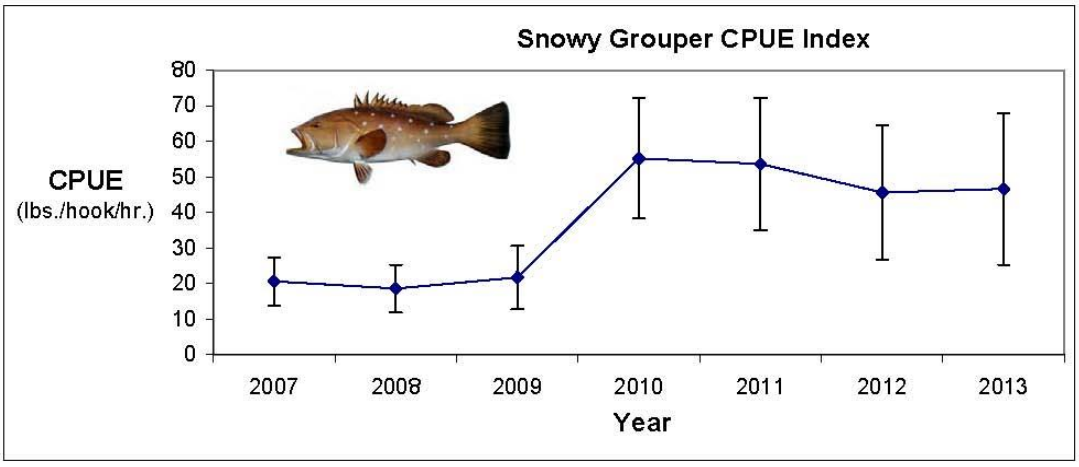
Lack of relevant spatially explicit evaluation of population

SEDAR 36 suffers from utilizing indices of abundance that are not explicit of the abundance pattern of the mature adult population. Specifically, the headboat and MARMAP surveys are not performed in spatial context with this deep water species where mature adults reside (~200 to 700' depth). This discrepancy has obvious implications on the ability of the shallow water fleets to produce coherent life history data and indices of abundance indicative of this mature adult population. Alternatively, the commercial handline fishery that is prosecuted within an acceptable spatial range of the mature adult population has been excluded by the analysts both in SEDAR 4 and here in SEDAR 36.

The area north of Cape Hatteras was excluded from Southeast Region Headboat Survey (SRHS, area 1) index development for this stock assessment. Although this exclusion may be statistically prudent, this decision is in spite of a SEDAR 36 panelist's divulgence that a significant Snowy grouper fishery has developed north of Cape Hatteras over the past 20 years. The SEDAR 36 analysts dismiss the significance of this emerging fishery by providing data that only 0.6% of the South Atlantic commercial landings are caught off of VA. This issue raises a question as to whether the NMFS-SEFSC is truly cognizant of northerly range extensions of snapper-grouper species north of Cape Hatteras, but south of VA. The choice of SEDAR 36 to not evaluate this emerging fishery suggests inaccuracy in the SEDAR 36 findings and projections, and a need to consider these issues in future assessments. Indeed, the NMFS Chief Scientist, Richard Merrick has recently acknowledged that climate change-driven range extensions confound western Atlantic stock assessment SSB & MSY estimates as we move in the future, particularly for species undergoing extensions north of Cape Hatteras and subsequently into the mid Atlantic US coast. It is clear that the SEFSC must more clearly account for the confounding impacts of climate change on stock structure in all future South Atlantic fishery stock assessments.

Indices of abundance

The indices of abundances used in SEDAR 36 suffer from unacceptable statistical variance (see SEDAR 36 Tables 6&7). Specifically, the CV's for the MARMAP chevron trap and vertical line indices were beyond acceptable statistical thresholds in all years. Likewise, the annual headboat index of abundance values routinely exceeded statistical acceptable CV thresholds. Oddly, the commercial handline index, which was only considered as a sensitivity run, was statistically rigorous, with CV's always < 10%. Further, the commercial handline index (1993-2005) shows an increasing trend of abundance, evidence that the index is subverting the "hyperstability" issue that SEFSC analysts have used to justify its exclusion. Indeed, the Oden & Barile (2013) comment to SEDAR 36 continues the SEFSC's trend analysis of an increasing commercial handline fleet CPUE by extending a nominal commercial handline CPUE index from 2007 to 2013 (see below), and the description of this index was provided to SEDAR 36. These data below were not utilized in SEDAR 36. In a broader context, the concern of "local hyper-depletion" of the stock needs to be rigorously examined in context with the cryptic, but broad spatial distribution of the deep-water complex meta-population.



In summary, we encourage the SSC to provide a critical review of the SEDAR 36 snowy grouper standard assessment that is inclusive of the problems highlighted in this comment. We hope that the problems with SEDAR 36 as with other grouper assessments, such as the 2014 South Atlantic gag update, will be kept in mind as the SSC determines prudent fishing removal rates based upon stock projections; as these interpretations are utilized to direct the SAFMC's management decisions. Specifically, the projections from SEDAR 36 should be considered as "conservative" as the SSC sets revised ABCs under the rebuilding plan for a now "underfished" snowy grouper stock.