

# Review of: "Estimates of Atlantic Goliath Grouper (*Epinephelus Itajara*) Bycatch Mortality in Commercial Fisheries of the Southeastern Us From 2002 to 2022"

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**Potential competing interests:** Member of the IUCN SSC's Grouper and Wrass Red List Specialist Group. No potential competing interests to declare.

Overall, an interesting and well-written paper, and although the available data are adequately analysed, it relies on some major assumptions, and in places suffers from an element of circular reasoning (especially regarding the relationship between capture depth and barotrauma, etc.). The serious problem that it attempts to address, however, will be important in considering the future sustainable management of this, and potentially other, grouper species.

Some specific minor corrections and suggestions for its improvement are as follows (-with pagination, etc., referring to the 19 March PDF version):

Title - this needs to be fixed by correcting the capitalisation, etc., as follows: "Estimates of Atlantic Goliath Grouper (*Epinephelus itajara*) Bycatch Mortality in Commercial Fisheries of the South-eastern United States from 2002 to 2022."

Add affiliation of third author below this (-though it is included again later?)

Abstract - line 2, add "mortality due to bycatch"; line 3, add capture "of this species"; line 6, "... itajara captured are estimated to have died." This Abstract could also be expanded a bit (e.g., to include mention of its importance to management, etc.).

Introduction - page 1, para 2, line 3, remove "in" before "the state of Florida"; line 5, remove "listing" and add "its Red List threat category"; page 2, first para, line 2, add "and predation by"(?) snook (?).

Materials and Methods - Describe the fishery(ies) involved here in more detail, including geographical extent and fishing methods, etc. - presumably all catches referred to here are taken by hook and line, though this is nowhere specified?

Analyses - para 1, line 3, "changed" over time.

Page 3, Figure 1 - what do the "A" and the two "Bs" refer to in this figure? If not relevant here, remove.

Page 4, Figure 2 - line 2 of caption, specify total, not standard, lengths (TL); line 4 of caption, total length and "degree of barotrauma". The details of how the three degrees of barotrauma used in the above two figures were quantified also need to be specified somewhere in the text.

Para 1, line 5, start a new sentence here, "Because ..."

Figure 3 - Estimates of mortality for gag were only ~30% at 30m depth of capture according to this figure. However, as these data were seemingly for vented fish, the relevance of these results to the present E. itajara case would seem to be questionable?

Results - pages 8 and 9, Table 1 - add a % column at right.

3.2 Venting - maybe emphasise here that the apparent lack of data on the extent (-or possibly total absence?) of venting in the commercial fishery needs to be addressed by management?

Page 10, para 1, line 1, not "found", but ""estimated" 40% mortality here; line 2, "post-release mortality"; para 2, reword first sentence for clarity, as it makes no sense as it is; para 3 makes some major assumptions which need to be justified?; line 5, "may have" occurred

Pages 10 and 11, Table 3, caption, Summary of catch and "estimated" mortality; remove "non-venting" here, as there is no information available re this? In general, this table is confusing and in need of rethinking and some major reconstruction for clarity; line 5, "was estimated to be 75%".

In general, and following consideration of the above comments, this paper should provide a useful document for those involved in the management of this fishery.