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4th Meeting of the Southern Indian Ocean Fisheries Agreement (SIOFA) Scientific Committee

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SIOFA species list

Relates to agenda item: 5 Working paper ☒ Info paper ☐

Delegation of Australia and the SIOFA Secretariat

Abstract

This paper updates the SIOFA SC on development of a SIOFA species list, which is needed to categorise SIOFA species into the SIOFA stock assessment framework and for the ecological risk assessment for SIOFA teleosts. The work has relevance to the SIOFA databases, and more broadly, to any future work that requires reliable species-specific information. The species list (see Attachment A - excel spreadsheet) was built using catch records held in the SIOFA database and checked against codes and species reported in annual national reports. Two-hundred-and-twelve species or group codes were identified. These were assumed to be the FAO 3-alpha species codes against which CNCPs are required to submit data to SIOFA in accordance with CMM 2018/02. Species distribution data were then checked to confirm if the species or species group corresponding to the code occurred in the SIOFA area. The work uncovered a number of likely errors in the database coding arising from erroneous codes being used by CPs for data submission, including for some key target species. Uncertainty around whether a species or group occurred in the fishery was evident for around 12 percent of species and one species group. The analysis has also highlighted that a proportion of the data in the SIOFA database is currently associated with group codes which indicates that deriving species-specific information (such as catch volume) for applications such as stock assessment may be challenging.

Recommendations *(working papers only)*

It is recommended that the SC:

- Notes that there are a number of errors and inconsistencies in the SIOFA database and species list that need to be rectified to allow continuation of other work
- Discusses whether any changes to FAO 3-alpha codes would be a useful approach to resolving any of these issues
- Encourages CNCPs to report catch and other data at a species level
- Requests the SIOFA Secretariat to resolve these issues in collaboration with CNCPs before SC5 in 2020.

Purpose of this paper and introduction

The purpose of this paper and attachment A (excel spreadsheet) is to describe the current SIOFA species list and to highlight a number of issues with the SIOFA database that should be considered and rectified.

A SIOFA species list is needed to meet the objective to categorise SIOFA species into the SIOFA stock assessment framework. Refinement of the species list is also required for continuation of the ecological risk assessment for SIOFA teleosts. More broadly, accurate data at a species level is required for numerous other purposes, including reporting and stock assessment.

The work highlights that there are inconsistencies between codes being used by CNCPs and the FAO 3-alpha codes, which are required to be used in accordance with CMM 2018/02. This has likely resulted in a number of errors found in the SIOFA species list.

Methods used

We requested a list of all codes found in the SIOFA 'tow-by-tow' and 'summary catches' databases, ranked by catch volume (non-confidential), from the SIOFA Secretariat. Catch volume ranking may inform categorisation of species into the stock assessment framework, as well as for interpreting results of ecological risk assessment. We also requested a data field identifying which CNCPs had reported the code.

Three-letter species codes provided by SIOFA were assumed to be the FAO 3-alpha species codes and their associated scientific and common names were mapped using the FAO AFSIS List of Species for Fishery Statistics Purposes (http://www.fao.org/fishery/collection/asfis/en). Species' scientific names were then used to check species distribution from www.aquamaps.org to assess whether species occurred in the fishery. Codes were categorised as individual species or groups. Codes were also categorised as teleosts, chondrichthyans or 'other'. Where potential issues were identified, individual recommendations were made for each code.

Annual reports submitted by CNCPs were checked for codes or species that did not appear in the SIOFA database as well as for correlations or errors between 3-alpha species codes and those being submitted to SIOFA.

Results

Two-hundred and twelve unique codes were identified. Of these, a catch ranking was available for 115 species. The catch ranking for the remaining 97 species was not relevant because of very low catch volume (less than a few Kg) or because they were not in the SIOFA database (but were in national reports). Of the 212 codes, 179 (~84%) were thought to represent species that plausibly occur within the SIOFA area. Around 12% (25 codes) were deemed to represent species that do not to occur in the fishery and there was uncertainty around a further 6 codes.

A subset of examples are included below to demonstrate the types of issues that have been identified. The attachment to this paper (SIOFA_species_list.xslx) contains all issues that have been identified and suggestions for how they should be addressed.

Beryx splendens (Alfonsino) (official FAO code BYS)

BYX is reported by Cook Islands as *Beryx splendens* (SC-03-03(01) Cook Islands Annual National Report Appendix 1). However, BYX corresponds to the 3-alpha code for *Bathyraja smirnovi*, a golden skate, which does not occur in SIOFA. BYX ranks highest in terms of catch volume in the SIOFA database and it is reasonably safe to assume that all BYX should be changed to BYS in the SIOFA databases.

Hoplostethus atlanticus (Orange roughy) (official FAO code ORY)

The commercial code in use by Cook Islands for orange roughy is ORH and this code is used extensively in the South Pacific Region, including domestically by New Zealand. Australia have also submitted orange roughy catch data to SIOFA using this code. ORH corresponds to the 'whitespotted bambooshark', which does not occur in SIOFA. The official FAO code for orange roughy is ORY. All ORH has been coded back to ORY in the SIOFA databases. SAWG1 and SC3 recommended that a letter be sent to FAO regarding coding

issues relevant to ORY/ORH, but a specific request in relation to changing one or both of these codes was not formulated. It is recommended that the SERAWG/SC discuss this issue in more detail.

Hyperoglyphe antarctica (Blue-eye trevalla) (official FAO code BWA)

This species corresponds to the 3-alpha code of BWA but is reported by Cook Islands under the code BNS (see Appendix 1 SC-03-03(01) Cook Islands Annual National Report), which corresponds to *Benthosema suborbital* (Smallfin lanternfish). Australia has reported BNS as well as BWA. It is recommended that all BNS submitted by Cook Islands are changed to BWA in the SIOFA database. BNS records submitted by Australia should also be checked to confirm they are *B. suborbital* and not *H. antarctica*.

Schedophilus velaini (Violet warehou) (official FAO code SEY)

Cook Islands are reporting SEY as BBF. Appendix 1 SC-03-03(01) Cook Islands Annual National Report indicates BBF refers to *Hyperoglyphe moselii*, which is synonymous with *S. velaini* (www.fishbase.org). All records of BBF should be changed to SEY in the SIOFA databases.

SEY and BWA are very similar in appearance and Australia has noted some discrepancies in species reporting between logbook (completed by skippers) and observer records (see, for example, SC-03-03(04) Australia Annual National Report). It is likely that these issues are not unique to the Australian data.

Next steps

A systematic approach is required to resolve these issues. We recommend that the Secretariat work with CNCPs to request clarification around which species are being referred to for each submitted code. These can then be mapped correctly to the FAO 3-alpha codes.
We also recommend that CNCPs are encouraged to improve the reporting of catch and other data at a species level.

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