

SERAWG-02-INFO-03

2nd Meeting of the Stock and Ecological Risk Assessment Working Group (SERAWG2)

25-27 March 2020, Saint Gilles, Réunion

Summary of discussion and way forwards

Splendid alfonsino abundance indices (CPUE and acoustic data) for stock assessments

Relates to agenda item 3

Info paper

SC Head of Delegations

Abstract

This is the summary of discussion on splendid alfonsino abundances indices (acoustic data and CPUE) for stock assessments by SC Head of Delegations during May 2019.

Summary of discussion and way forwards

Splendid alfonsino abundance indices (CPUE and acoustic data) for stock assessments

SC Head of Delegations

(edited by Tom Nishida, Co-Chair of SERA-WG)

May 27, 2019

(1) Acoustic data

Tempo-spatial coverages of the current acoustic data based on the inventory made by Cook Islands is poor. However, they can be utilized as biomass indices in the integrated models as experienced in our orange roughy stock assessments by CASAL (SIOFA) and also in various species in other waters. In our orange roughy (SIOFA) case, one long time series (8 years) and good quality of the acoustic data was available only in Walters Shoal Region. For three other regions, the acoustic data coverage was very limited, and quality was uncertain as no QC were conducted. However, even number of the acoustic data was limited, they were used for CASAL by calibrating those in Walters Shoal Region. Therefore, we need a certain number of years of good quality of acoustic data for stock assessment. Hence, we can consider using our acoustic data after we investigate these two points (minimum number of years and quality).

However, to process acoustic data, it needs a fair amount of time, specialized expertise and potentially substantial budget also experienced in our orange roughy case. As we don't have such resources at present, we will continue to work this issue using the budgets proposed in SC4 and hopefully we can apply our acoustic data in the next assessment if these two points are verified. In addition, only if possible, Cook Islands may further investigate the extra acoustic data shown in the inventory made by Patchell by contacting him, so that more acoustic data may be utilized if they are available.

(2) CPUE

Stock assessment consultant for alfonsino to be hired later this year will scrutinize both nominal and standardized CPUE available in the SIOFA database covering almost all tempo-spatial fishing grounds to now. For this, we need to investigate how to standardize nominal CPUE by references in similar cases. If some of CPUE are useful (for example, standardized CPUE from independent different fleets in the same area show similar trends etc.), they may be applied for the integrated stock assessments such as CASAL. SC needs to discuss this using the Consultant results (report) before starting stock assessments. Hence, we need two steps procedures with the consultant (evaluation of CPUE standardization and stock assessment).

If CPUE cannot be used, we need to use the stock assessment methods without abundance indices. Some potential methods are shown below presented in last SERA-WG01 as just examples. In addition, the integrated stock assessment model such as CASAL may be applied without abundance indices as was implemented in our orange roughy stock assessment for some features, but it was done through calibrations using information from other data rich features and with a number of assumptions. Therefore, the application may be difficult. Anyway, SC will re-discuss this issue with the stock assessment consultant after the evaluation of the CPUE data.

Potential stock assessment methods without abundance indices					
Type		Time series data to estimate Biomass and relevant parameters		Snap shot for <u>management decisions</u>	
models		Cohort analysis without CPUE (age or size based)	Data poor (Stock Reduction Analyses)	Y/R (Yield Per recruit)	S/R (Spawning Per Recruit)
INPUT		Size, LW relation and growth equation for Catch -At-Age (Size)	Catch only	Weight + selectivity by age and M	Weight + selectivity + maturity by age and M
Major OUTPUT	MSY	NO (*)	YES	NO(*)	NO (*)
	Biomass	YES by age	YES	NO	NO
	F				
(*) MSY can be estimated by results of cohort and (Y/R or S/R) analyses					