Australian Government
Australian Fisheries Management Authority

Monitoring MYTAC species in the SESSF

A guide to monitoring species managed under a multi-year total allowable catch in the Southern and Eastern Scalefish and Shark Fishery.

Box 7051, Canberra Business Centre, ACT 2610 / Ph (02) 6225 5555 / Fax (02) 6225 5500 / AFMA Direct 1300 723 621 afma.gov.au

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1 Purpose

This framework provides direction on how to monitor any changes to a species or stock that is managed under a multi-year total allowable catch (MYTAC) within the Southern and Eastern Scalefish and Shark Fishery (SESSF). This is an interim framework, until such time as MYTACs are Management Strategy Evaluation tested.

2 Background

In 2010, the AFMA Commission agreed to the use of certain criteria and principles to set a total allowable catch (TAC) across multiple years, as outlined within the *Harvest Strategy Framework for the Southern and Eastern Scalefish and Shark Fishery* (the Harvest Strategy).

The Harvest Strategy stipulates that 'breakout rules' are to be applied as appropriate to MYTAC species as trigger points to identify fundamental changes from the understanding of the stock at the time of assessment.

Previously, breakout rules were applied to all MYTAC species as determined by the relevant RAG for that species.

At the 2017 Southern and Eastern Scalefish and Shark Fishery Resource Assessment Group (SESSFRAG) Chair's meeting, the RAG reviewed the process for applying breakout rules and developed a decision tree support tool (Appendix A) to assist RAGs to monitor MYTACs by evaluating relevant fishery indicators akin to that of breakout rules.

3 When should species under a MYTAC be evaluated?

The decision tree support tool at Appendix A has a series of questions designed to highlight species which might require further scrutiny by the RAG between scheduled assessments. Specifically, the decision tree considers whether:

1) the stock assessment is being conducted in that year
2) the stock is managed under a rebuilding strategy
3) the species or stock is within its initial MYTAC period
4) the stock is above the biomass (or proxy) target reference point
5) less than 50 per cent of the TAC was caught in the previous season due to non-operational reasons.

Depending on the answer to the questions above, one of the following scenarios occur:

a) The risk to the stock is considered to be low and no further analysis is required
b) There is some indication that the stock is at risk, and a series of fisheries indicators should be reviewed to ensure there have been no changes to the underlying assumptions of the stock assessment.

Prior to the SESSFRAG Data meeting each year, AFMA is responsible for assessing each MYTAC species using the decision tree support tool and identifying which species will require an evaluation of relevant fishery indicators. AFMA (with assistance from CSIRO) will then collate the fishery indicator data. The RAG is then responsible for reviewing the fishery indicators based on the guidance provided under section 5.

The RAG may override AFMA's application of the decision tree on a species specific basis with appropriate rationale. The RAG may also review fishery indicators and provide advice on any other species.

4 What is a fishery indicator?

Fishery indicators are variables used to identify fundamental changes to trends in a species or stock that is managed under a MYTAC during non-assessment years.

Fishery indicators may include:

- catch per unit effort (CPUE);
- total fishing mortality (from total catches, discards, catches in other fisheries or jurisdictions);
- size and age structure; or
- economic factors (for species under calculated economic target reference points)

5 Reviewing fishery indicators

The following review of relevant fishery indicators, using a weight of evidence approach, should be undertaken for a species highlighted as potentially at risk after consideration of the criteria in the decision tree support tool. Representativeness of the data should be considered in reviewing indicators and potential responses.

<u>For all species</u>

- Relevant operational and management changes
- Data outside historical ranges

<u>Tier 1 species</u>

- Standardized CPUE
- FIS data if available
- Age and length composition (recruitment)
- Discard estimates (to look for recruitment events, failure of recruitment events to eventuate)
- Conflicting data (e.g. age composition between observers, crew collected and FIS)

<u>Tier 3 species</u>

- Discards
- Age and/or length composition

Tier 4 species

- Standardized CPUE
- Discards

Tier 5 species

- Catch versus TAC
- Discards estimate

6 Review outcomes

After reviewing fishery indicators, if the RAG is satisfied that a significant change has occurred or that the underlying assumptions of the stock assessment are no longer valid, the RAG should recommend an appropriate management response. The response should be proportionate to the risk identified and might include:

- bringing a scheduled assessment forward for re-assessment and subsequent setting of a revised MYTAC,
- reducing the TAC for the remainder of the MYTAC period,
- implementing a single year TAC, or
- other actions as determined.

Resource capacity must be considered alongside other priorities when deciding what an appropriate response is.

Appendix A: Decision tree support tool for evaluating fishery indicators

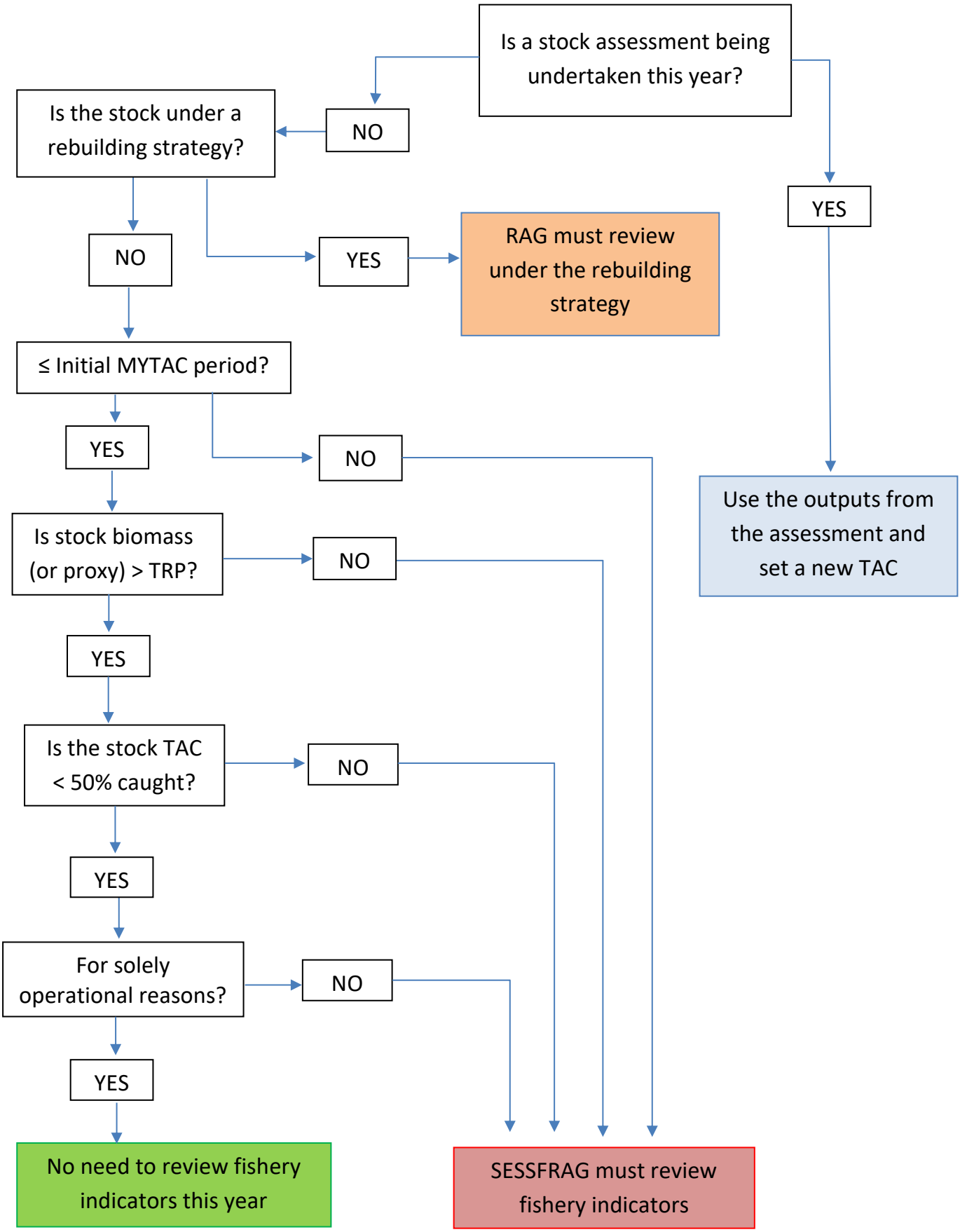

Diagram 1 Decision tree support tool (source: SESSFRAG TWG 2019 papers)