Australian Government
Australian Fisheries Management Authority

Harvest Strategy

FOR THE BASS STRAIT CENTRAL ZONE SCALLOP FISHERY

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Introduction

In 2007, the Harvest Strategy for the Bass Strait Central Zone Scallop Fishery (BSCZSF) was developed within the framework of the *Commonwealth Fisheries Harvest Strategy Policy 2007* (CHSP).

The 2007 Harvest Strategy was revised for the 2012 season and was prepared in response to the review provisions in the 2007 Harvest Strategy,[1] and the CHSP.[2] In response to industry concerns about the cost-effectiveness and flexibility of the 2012 Harvest Strategy it was reviewed in 2014. This Harvest Strategy incorporates AFMA's and industry members' experiences operating in the BSCZSF since the introduction of the 2012 Harvest Strategy.

The main target species in the BSCZSF is the Commercial Scallop, *Pecten fumatus*. As was the case at the time of implementation of the 2007 Harvest Strategy, the BSCZSF remains subject to the high variability in abundance, growth, mortality, meat yield and condition of the resource. Concession holders are also able to target Doughboy Scallop *Chlamys (Mimachlamys) asperrimus*, a species common throughout Bass Strait however it is rarely retained.

This variability means that management of Commercial Scallops has to be adaptable to sometimes rapidly changing circumstances. The stock recruitment relationship is sporadic and intermittent. Growth rates are variable within the fishery, with scallops growing at different rates in different areas. Most Commercial Scallops living in wild populations probably live for between five and nine years,[3] but have been observed to die-off rapidly after only three to five years.[4]

Objectives of this Harvest Strategy

In general, the BSCZSF challenges some of the key assumptions underlying the CHSP, which requires stocks to be managed using an MEY target, or if unavailable, MSY or B_0 based proxies. The resource's naturally sporadic and fluctuating availability and intermittent recruitment makes it very difficult to maintain the fishery at MSY or B_0 related target reference point.

Where the CHSP does not conform to the circumstances of a fishery and where neither stock size required to produce maximum sustainable yield (B_{MSY}) nor B_0 can be estimated, the CHSP provides '*harvest strategies should be developed that best meet the requirements of the [CHSP] and AFMA's legislated objectives'.*[5]

[1] 2007 Harvest Strategy pages 20 and 21.
[2] CHSP page 7 provides for review of the harvest strategies for most stocks every three-five years, or where there is new information that substantially changes the understanding of the status of a fishery, and leads to improved estimates of reference points.
[3] Haddon et al *Juvenile Scallop Discard Rates and Bed Dynamics: Testing the Management Rules for Scallops in Bass Strait* (2006) at page 9.
[4] Haddon (2006) at page 88 and see for example the die off of the White Rock bed in Tasmanian waters in 2010-11.
[5] CHSP page 23.

Accordingly, the primary objectives of this Harvest Strategy are to:

1. keep stocks within the BSCZSF at ecologically sustainable levels and, within that context, maximise the economic returns to the Australian community;[6] and
2. pursue efficient and cost-effective management in attaining (1) above.[7]

Having a fishery each year in the BSCZSF is not an objective of this harvest strategy, however, consideration of whether provision should be made for a fishery in a year will be considered in the context of objective 1 above. As one means of pursuing coordinated management across the South East Australian Scallop resource, where possible, the harvest strategy is aligned with the arrangements adopted by Tasmania and Victoria within their respective management jurisdictions.

Harvest Strategy Framework

The Harvest Strategy Framework (HSF) adopted for the BSCZSF uses a tiered approach designed to apply different levels of management and research services depending on the state of the resource. A map of the application of the harvest strategy process is outlined in Figure 1. The framework explicitly allows the level of investment, through the levy base, to be varied to match commercial interests in exploiting the resource. The following describes the requirements under each of the tiers of the harvest strategy:

Default opening

Underpinning the tiered approach applied in the HSF is the need to balance the risk of over exploitation with obtaining initial knowledge on the status of the stock at the commencement of the season. Each year, a 150 tonne Total Allowable Catch (TAC) may be set at the commencement of the season to provide concession holders the capacity to search for and locate commercially viable scallop beds. A commercially viable scallop bed under the harvest strategy is defined as:

An area or scallop bed containing no greater than 20 per cent of scallops of a size less than 85 mm.

The season will not commence until the TAC has been determined and quota allocated to the Statutory Fishing Rights held by concession holders.

Industry will apply voluntary arrangements to close and open scallop beds to ensure no greater than 50 tonnes of the 150 tonne TAC is harvested from any individual scallop bed located.

The TAC will not be increased above 150 tonnes unless a biomass estimate, as determined by a research survey, is able to identify an area or scallop bed containing at least 1500 tonnes biomass of high density scallops with a minimum size of 85mm.

When operating under the default opening the industry co-management committee will close scallop beds or areas under voluntary arrangements that do not meet the discard rate of less than 20 per cent of scallops less than 85mm.

[6] CHSP page 4 and *Fisheries Management Act1991* section 3A.
[7] *Fisheries Management Act1991* section 3A and CHSP page 26.

Surveys

Should industry locate or identify a commercially viable bed the option exists for biomass estimates for this bed/s to be determined. The decision to undertake a transect survey to establish a biomass estimate of an identified commercially viable scallop bed will be considered by ScallopRAG and ScallopMAC. Noting the decision to undertake a cost recovered transect survey would be based on the potential economic viability of the scallop bed. Should multiple commercially viable scallop beds be located advice on which beds to survey will be sought from ScallopRAG and ScallopMAC.

The co-management committee will coordinate the vessel/s to undertake transect surveys to identify a scallop bed containing at least 1500 tonnes. Each vessel undertaking a transect survey will be required to either have an independent observer onboard or electronic monitoring that is able to verify catch quantity, size and any other scientific data required to determine biomass estimates.

The biomass estimate results of the transect survey/s will determine whether fishing can be undertaken at either the Tier 1 or 2 level. Should the biomass estimate results demonstrate the requirements to conduct fishing at either Tier 1 or 2 have been met then advice will be sought from ScallopRAG and ScallopMAC about setting TAC levels permitted under Tier 1 and 2.

Tier 1 – TAC starting at 1000 tonnes

Should a biomass estimate report illustrate that a scallop bed/s containing at least 1500 tonnes in total of scallops of a minimum size limit of 85mm of high density be located, the fishery may be opened to fishing under the following arrangements:

- An area (consisting of one or more defined, substantial beds of scallops) containing not less than 1500 tonnes biomass of scallops of a size limit of 85 mm of high density will be closed to fishing for the entire season.
- The area of the fishery not closed to fishing will be opened for the entire season with a TAC of 1000 tonnes.
- Should 800 tonnes of the 1000 tonne TAC set be caught during the season the TAC will be increased to 1500 tonnes if required.
- Should 1300 tonnes of the 1500 tonne TAC set be caught during the season the TAC will be increased to 2000 tonnes if required.
- Scallop beds fished that do not meet the discard rate of less than 20 per cent of scallops less than 85mm in size will be closed to fishing under voluntary arrangements applied by industry via the industry co-management committee.
- Fishers are encouraged to collect length frequency data using electronic measuring boards (when available) in accordance with the research data requirements developed by IMAS to provide ongoing data to assess and manage the fishery.

Tier 2 – TAC above 2000 tonnes

Should a biomass estimate report illustrate that a scallop bed/s containing at least 3000 tonnes of scallops of a minimum size limit of 85mm of high density be located the fishery may be opened under the following arrangements:

- An area (consisting of one or more defined, substantial beds of scallops) containing not less than 3000 tonnes biomass of scallops of a minimum size limit of 85 mm of high density will be closed to fishing for the entire season.
- An area/s of the fishery will be opened to fishing with a TAC of at least 2000 tonnes.
- Scallop beds fished that do not meet the discard rate of less than 20 per cent of scallops less than 85mm in size will be closed to fishing under voluntary arrangements applied by industry via the industry co-management committee.
- Fishers are encouraged to collect length frequency data using electronic measuring boards (when available) in accordance with the research data requirements developed by IMAS to provide ongoing data to assess and manage the fishery.

Moving up to Tier 1 or 2 from default opening

The HSF provides flexibility to move from the default opening TAC of 150 tonnes to either Tier 1 or 2 (See Figure 1). The minimum requirements to move to either Tier 1 or 2 are:

Tier 1

The identification of a scallop bed/s containing at least 1500 tonnes of scallops of a minimum size limit of 85 mm of high density, with the identified area closed to fishing should it be determined that fishing will be undertaken at the Tier 1 level.

Tier 2

The identification of a scallop bed/s containing at least 3000 tonnes of scallops of a minimum size limit of 85 mm of high density, with the identified area closed to fishing should it be determined that fishing will be undertaken at the Tier 2 level.

The decision to move to either Tier 1 or 2 from the default opening will be made by the AFMA Commission following advice from ScallopRAG and ScallopMAC on the matter.

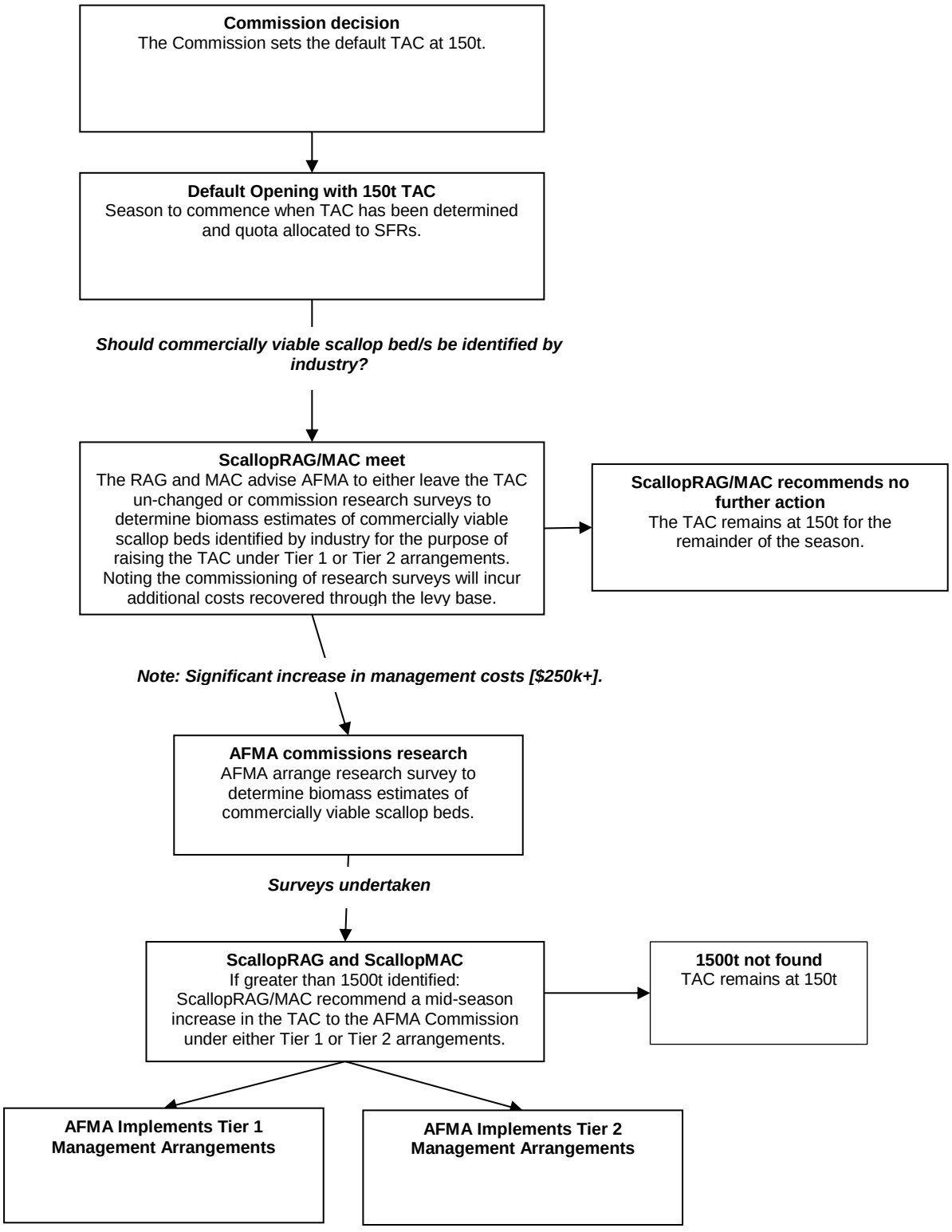

Figure 1: Process map of the application of the HSF.

Meta rule - Fishery closed

Should factors influencing the condition of the stock and/or its abundance illustrate the fishery should not be opened the fishery may be closed for a fixed period of time. Advice on the period of time the fishery should be closed for will be sought from both ScallopRAG and ScallopMAC.

If the fishery is not closed for the entire season advice on information required or triggers to open the fishery will be obtained from ScallopRAG and ScallopMAC. Noting factors influencing the condition of the stock and/or its abundance can be both naturally occurring and human activities.

Co-Management Committee

The *BSCZSF Industry Management Committee* (Co-Management Committee) will comprise of the members as determined by ScallopMAC, ordinarily consisting of:

- a chairperson
- two industry representatives from Tasmania
- two industry representatives from Victoria.

The Co-Management Committee may agree upon fishing start and end dates within season dates, the order and timing of harvesting within open areas and the protection of juvenile or local spawning biomass within open beds as appropriate (which may include having regard to stock status within Tasmanian and Victorian waters).

The Co-Management Committee must provide AFMA with:

- notification of agreed fishing start and end dates at least 24 hours before the commencement of fishing
- notification of agreed voluntary closures to protect juvenile scallop beds that do not meet the discard rate of less than 20 per cent of scallops less than 85mm at least 5 days prior to commencement
- prompt information regarding Co-Management Committee agreed actions, implementation and outcomes, to allow consideration of actions by ScallopRAG and ScallopMAC before ScallopRAG and ScallopMAC make recommendations to AFMA for the following season.

Total allowable catch

The TACs for Commercial scallops are specified under each Tier and the default opening.

A default TAC of 100 tonnes will apply to Doughboy Scallops however AFMA may determine a different TAC for this species in any year.

Surveys

Under the Harvest Strategy the information collected during surveys can vary depending on the type of survey and data needs. In general there are two types of surveys:

- Exploratory Surveys: to test the quality and condition of scallops, generally conducted prior to the commencement of the season
- Biomass and Discard Rate Surveys: to produce biomass estimates of scallop beds or areas to determine whether scallop bed/s contain sufficient quantities of high density scallops of a minimum size limit of 85mm required to meet the closure arrangements under Tier 1 and 2.

AFMA and the research provider will determine the timing and standard requirements prior to the commencement of any surveys. This includes defining survey conditions and design such as the area to be surveyed, information to be recorded, carriage of an onboard observer and reporting requirements.

Harvest Strategy review

The operation of the BSCZSF under the Harvest Strategy is to be reviewed annually by ScallopRAG and ScallopMAC and, if necessary, AFMA. Any change to the Harvest Strategy must be agreed by the AFMA Commission.