



Australian Government

Australian Fisheries Management Authority

# Bycatch and Discard Workplan

Bass Strait Central Zone Scallop Fishery

2025

Securing Australia's fishing future

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## Version History

Version and date	Details	Approver
Version 1.0 (June 2025)	Revised following updated Ecological Risk Assessment	ScallopRAG & ScallopMAC
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Version 1.2 (May 2026)	Re-formatted with updates to hyperlinks where necessary	Mark Grubert

# 1 Introduction

In carrying out its functions, the Australian Fisheries Management Authority (AFMA) must pursue objectives in the [Fisheries Management Act 1991](#) (the Act) including having regard to the impact of fishing activities on non-target species and the long-term sustainability of the marine environment.

AFMA is responsible for implementing the [Commonwealth Bycatch Policy](#) (the Bycatch Policy) through its operational policies and supporting fisheries management strategies (bycatch strategies). Consistent with the requirements of the Bycatch Policy, and as required under the [Bass Strait Central Zone Scallop Fishery Management Plan 2002](#) (the Management Plan), AFMA implements Bycatch and Discard Workplans for each fishery to ensure that:

- information is gathered about the impact of the fishery on bycatch species;
- all reasonable steps are taken to minimise incidental interactions with seabirds, marine reptiles, marine mammals and fish of a kind mentioned in sections 15 and 15A of the Act;
- the ecological impacts of fishing operations on habitats in the area of the fishery are minimised and kept at an acceptable level; and
- bycatch is reduced to, or kept at, a minimum and below a level that might threaten bycatch species.

Under [Fisheries Management Paper 14](#), the primary ecological sustainability objective that AFMA pursues via the ERM framework mirrors the sustainability objectives defined in existing fisheries and environmental legislation, policies, guidelines, and international agreements. In summary;

- to ensure that fishing (in Commonwealth commercial fisheries) does not reduce any commercial or bycatch species populations (that is, discrete biological units, commonly referred to as stocks in the BP and the [Commonwealth Fisheries Harvest Strategy Policy - HSP](#)) to or below a level at which the risk of recruitment impairment is unacceptably high;
- where such fishing impacts have occurred, to put in place management to allow rebuilding of species populations to above that level;
- to minimise fishing-related impacts on general bycatch and species listed under the [Environment Protection and Biodiversity Conservation Act 1999](#) (the EPBC Act) by ensuring the exploitation of fisheries resources is consistent with the principles of ESD; and
- to pursue broader habitat security for non-living ecological components.

There are five guiding principles that AFMA uses to identify issues and minimise bycatch. These are outlined in the [AFMA Bycatch Strategy 2017–22](#):

- Principle 1. Management responses are proportionate to the conservation status of bycatch species and Ecological Risk Assessment results.
- Principle 2. Consistency with Government Policy and legislative objectives (including to avoid and minimise) and existing national protected species management strategies such as the threat abatement plan and national plans of action.
- Principle 3. Incentives should encourage industry-led solutions to minimise bycatch of protected species utilising an individual accountability approach.
- Principle 4. Accounting for cumulative impact of Commonwealth Fisheries on protected species when making management decisions on mitigation.
- Principle 5. Appropriate and consistent monitoring and reporting arrangements across fisheries.

As articulated in the Bycatch Policy, the primary objective for bycatch management is to minimise fishing-related impacts on bycatch species in a manner consistent with the principles of ecologically sustainable development (ESD) and with regard to the structure, productivity, function and biological diversity of the ecosystem. In delivering on this objective for Commonwealth fisheries, the Bycatch Policy requires AFMA to:

- draw on best-practice approaches to avoid or minimise all bycatch, and minimise the mortality of bycatch that cannot be avoided;
- manage fishing-related impacts on general bycatch species to ensure that populations (that is, discrete biological units, commonly referred to as stocks in the HSP) are not depleted below a level where the risk of recruitment impairment is regarded as unacceptably high; and,
- where fishing-related impacts have caused a bycatch population to fall below the level described, implement management arrangements to support those populations rebuilding to biomass levels above that level.

The Management Plan requires AFMA to implement a bycatch action plan (now referred to as a Bycatch and Discard Workplan) to ensure that the incidental catch of scallops and other species are minimised. The Bass Strait Central Zone Scallop Fishery (BSCZSF) has had three previous workplans:

- the BSCZSF Bycatch and Discard Workplan 1 June 2009 to 31 May 2011;
- the BSCZSF Bycatch and Discard Workplan 1 May 2012 to 31 April 2014; and
- the BSCZSF Bycatch and Discard Workplan 1 May 2015 to 31 March 2017.

This Bycatch and Discard Workplan incorporates findings from the review of the 2015 to 2017 workplan and the results of the Ecological Risk Assessment (ERA) finalised in 2024.

The aims of this Bycatch and Discard Workplan are to:

- respond to high ecological risks assessed through AFMA's ERA processes, management responses and other assessment processes
- avoid interactions with species listed under the EPBC Act
- minimise bycatch in the fishery over the long-term.

This Bycatch and Discard Workplan should be read in conjunction with the:

- [Commonwealth Fisheries Bycatch Policy](#)
- [AFMA Bycatch Strategy – Mitigating protected species interactions and general bycatch \(2017-2022\)](#)
- [Bass Strait Central Zone Scallop Fishery Management Plan 2002](#)
- [Ecological Risk Management Report for the Bass Strait Central Zone Scallop Fishery \(2023\)](#)
- [Harvest Strategy for the Bass Strait Central Zone Scallop Fishery](#)
- [Commonwealth Fisheries Harvest Strategy Policy](#)
- [Ecological risk management strategies](#)

## 2 Fishery description

Commercial scallop fishing in Bass Strait commenced in the early 1970s and is managed under three jurisdictions. AFMA manages the BSCZSF, and Victoria and Tasmania manage zones generally out to 20 nautical miles (nm) off their respective coastlines under Offshore Constitutional Settlement agreements (Figure 1). The target species of the BSCZSF is the Commercial Scallop (*Pecten fumatus*). Concession holders are also able to target Doughboy Scallops (*Chlamys asperimus*), a species common throughout the Bass Strait, which is rarely retained as markets do not currently exist. Further information on the BSCZSF can be found in the [BSCZSF Management Arrangements Booklet](#).

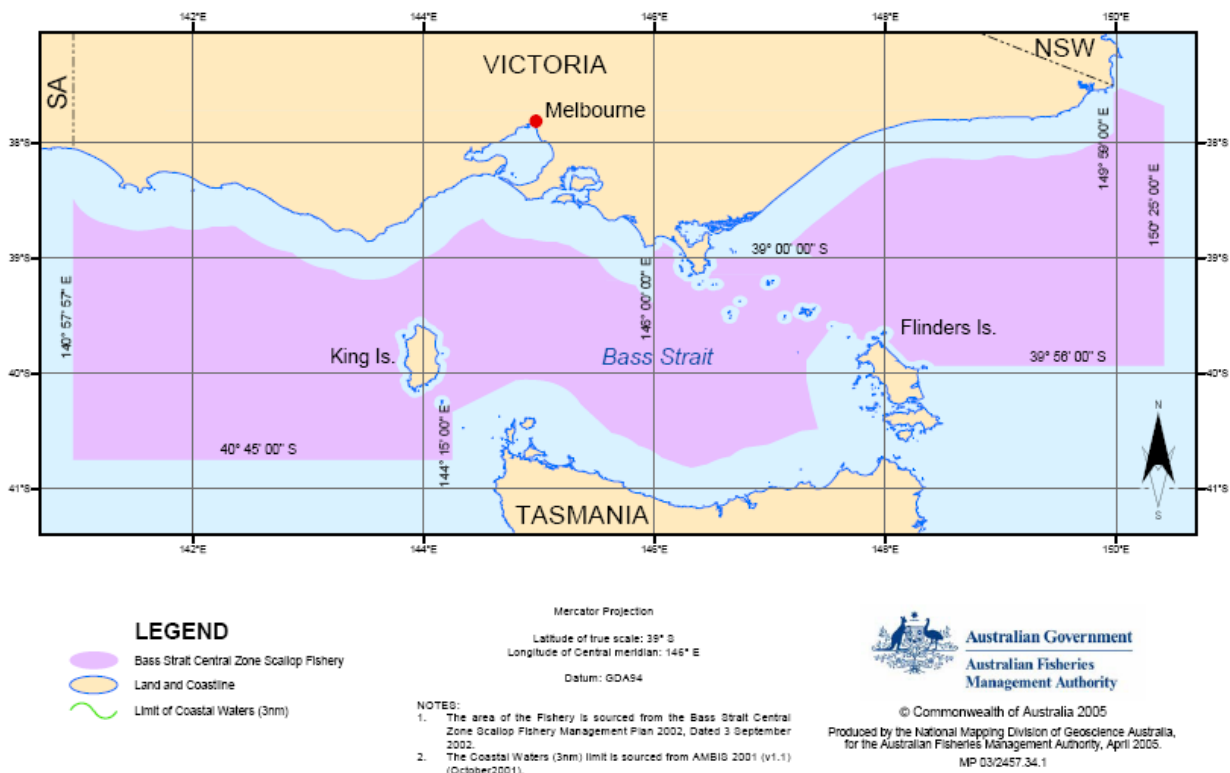


Figure 1 Area of the Bass Strait Central Zone Scallop Fishery

## 3 Characterisation of bycatch, discarding and habitat

This Bycatch and Discard Workplan focuses on discards of, or damaging interactions with fishing gear of:

- juvenile or damaged Commercial Scallops, a quota species
- Doughboy Scallops, a quota species
- other non-quota species assessed as high-risk species for the BSCZSF (see below).

Bycatch in the BSCZSF has been low because of the targeted nature of fishing. The areas fished are regions where scallops are abundant and generally exhibit low species diversity (almost exclusively Commercial Scallops) and low bycatch abundance (Haddon *et al.*, 2006).

Discarding of Commercial Scallops occurs only when scallops are undersized. Catches of juvenile scallops are low because:

- smaller scallops can pass through the teeth of scallop dredges
- The Harvest Strategy directs the industry co-management committee to voluntarily close scallop beds that do not meet the discard rate of less than 20 per cent of scallops less than 85 mm in length.

### 3.1 Ecological Risk Assessment: high-risk and endangered, threatened and protected species

No interactions with high-risk species or Endangered, Threatened or Protected (ETP) species have been reported (through fishery logbooks) in the BSCZSF since the first Bycatch and Discard Workplan was implemented in 2009. In recent years some interactions have been recorded during fishery-independent surveys, three species classified as high risk were reported: the southern blue-ringed octopus (*Hapalochlaena maculosa*), black and white seastar (*Luidia australiae*), and King Island thickshell clam (*Eucrassatella kingicola*). The survey reports are available on the [here](#).




The ERM carried out in 2023 as part of the ERA identified 174 bycatch species that were thought to occur within the area of the BSCZSF. Of all assessed bycatch species, 45 were at high-risk, 112 were at medium risk, and 12 were at low risk. Of these, 144 were non-robust (i.e., data deficient) species. Of the 45 high risk species, none have all 11 attributes, four are missing one to three attributes, and 41 are non-robust (i.e., missing more than three attributes).

A residual risk analysis was performed on 45 species. Following the residual risk analysis, 17 of the 45 species remained at high-risk, i.e., 28 species were reduced to medium risk. Overall, there were 17 high-risk species, 140 medium risk species and 12 low risk species (Sporcic et al, 2024). The categorisation of the 17 high-risk species was made on the basis of a lack of information on their biology and/or life history (summarised in Table 1). There have been no reported interactions with the high-risk species in Table 1 or the four identified species from the previously ERA, since the implementation of the Bycatch and Discard Workplan.





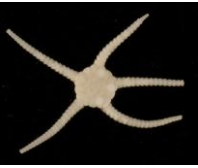
As part of the review of the Bycatch and Discard Workplan, the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) carried out further assessment of high-risk species (1 sea star, 9 brittle stars and 7 sea cucumbers), noting that many of the species (Table 1) are not well studied, and in particular, there is very little information in relation to species-specific productivity related attributes. This matches the CSIRO conclusion in the draft ERA report. ABARES has identified a number of echinoderm experts in Australia to provide species specific attributes relevant to the BSCZSF.

Experts including, Professor Maria Byrne (University of Sydney), Mr Tim Skewes (ex-CSIRO, now consultant) and Dr Tim O'Hara (Museums Victoria) provided comments and known records of interactions in relation to the high-risk species (see Table 1). They concluded that due to the diverse nature of the listed echinoderms it was difficult to make assumptions regarding attributes, distribution and whether these species would be present in the BSCZSF or impacted by fishing interactions. This advice will be provided to CSIRO to inform an update of the ERA in the future. The Commonwealth Fisheries Bycatch Policy is also currently under review and may also result in future amendments to the Workplan.




**Table 1.** Priority list of high-risk species to be addressed in the BSCZSF (No. Missing = missing attributes in PSA analysis).

Taxonomic Group	Scientific Name	Common Name	No. Missing	Role in Fishery	Highest Level of Assessment	Risk Score	Expert Review comments	Known record of interactions
Invertebrate 	<i>Luidia australiae</i>	Black and white seastar	4	Discard	Level 2 PSA Residual Risk Assessment	High	Major predator of benthic species, including scallops Endemic to S Aus – wide distribution, common Same habitat as scallops - vulnerable 1000+ eggs, feeding larvae	Records off South Australia (SA) and Tasmania (TAS), no records off Flinders Island (FI) or King Island (KI).
Invertebrate 	<i>Conocladus australis</i>	Southern Basketstar	6	Discard	Level 2 PSA Residual Risk Assessment	High	Predator Endemic to S Aus, common Lives epizootically on sponges so could be vulnerable to dredging No info on eggs/larva/life history, but likely to spawn 100+'s of eggs	Atlas of Living Australia (ALA) suggests species occurs off SA and TAS, including FI and KI. Uncertainty as to overlap with fishery.
Invertebrate 	<i>Astrosierra amblyconus</i>	Basketstar	6	Discard	Level 2 PSA Residual Risk Assessment	High	N NSW to Tas, Predator of zooplankton No info on eggs/larva/life history, but likely to spawn 100+'s of eggs	ALA suggests species occurs off New South Wales (NSW) and Victoria (VIC). One record in Bass Strait (BS). Uncertainty as to overlap with fishery.




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<p>Invertebrate</p> 	<p><i>Astrothrombus rugosus</i></p>	<p>Basketstar</p>	<p>6</p>	<p>Discard</p>	<p>Level 2 PSA Residual Risk Assessment</p>	<p>High</p>	<p>Deep water NSW coast – occasionally extends to Bass S and Tas, so less abundant in region of the fishery (MB) Predator of zooplankton.  No info on eggs/larva/life history, but likely to spawn 100+'s of eggs</p>	<p>&lt;10 records off TAS and none in BS. Uncertainty as to overlap with fishery.</p>
<p>Invertebrate</p> 	<p><i>Gorgonocephalus pustulatum</i></p>	<p>Basketstar</p>	<p>6</p>	<p>Discard</p>	<p>Level 2 PSA Residual Risk Assessment</p>	<p>High</p>	<p>Deep water – (max depth ~75 m) (TO) overlap with fishery is unlikely. Predator of zooplankton, lives epizootically. No information on eggs/larva/life history, but likely to spawn 100+'s eggs.</p>	<p>&lt;10 records off TAS and none in BS. Uncertainty as to overlap with fishery.</p>
<p>Invertebrate</p> 	<p><i>Ophiomisidium irene</i></p>	<p>Brittlestar</p>	<p>9</p>	<p>Discard</p>	<p>Level 2 PSA Residual Risk Assessment</p>	<p>High</p>	<p>Predator/Scavenger, common in NZ. Likely to live in soft sediments, same habitat as scallops. No information on life history, likely to have small eggs – spawning 1000+ eggs.</p>	<p>12 records off TAS and none in BS. Uncertainty as to overlap with fishery.</p>
<p>Invertebrate</p> 	<p><i>Ophioplinthus accomodata</i></p>	<p>Brittlestar</p>	<p>5</p>	<p>Discard</p>	<p>Level 2 PSA Residual Risk Assessment</p>	<p>High</p>	<p>Occur too deep to be impacted by the scallop industry in Bass Strait (max depth ~75 m). Detritovore, no information on life history.</p>	<p>15 records off TAS and none in Bass Strait. Uncertainty as to overlap with fishery.</p>
<p>Invertebrate</p> 	<p><i>Amphiophiura urbana</i></p>	<p>Brittlestar</p>	<p>5</p>	<p>Discard</p>	<p>Level 2 PSA Residual Risk Assessment</p>	<p>High</p>	<p>Predator/scavenger, lives in sediment therefore habitat may overlap with fishery. No information on life history.  Likely to have small eggs – spawning 1000+ eggs,</p>	<p>26 records off TAS and none in BS. Uncertainty as to overlap with fishery.</p>

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<p>Invertebrate</p> 	<p><i>Ophiactis resiliens</i></p>	<p>Brittlestar</p>	<p>5</p>	<p>Discard</p>	<p>Level 2 PSA Residual Risk Assessment</p>	<p>High</p>	<p>Filter feeder – very common May overlap with fishery, but widespread and numerous so would not be threatened Spawning 1000+ eggs – feeding larva</p>	<p>Species depth range suggests that it may occur in BS and potentially overlap with fishery operations. 33 records around TAS/BS.</p>
<p>Invertebrate</p>	<p><i>Ophiactis tricolor</i></p>	<p>Brittlestar</p>	<p>5</p>	<p>Discard</p>	<p>Level 2 PSA Residual Risk Assessment</p>	<p>High</p>	<p>Filter feeder – rare May overlap with fishery, No information on life history Liley to spawn 1000+ eggs with feeding larva.</p>	<p>Species depth range suggests that it may occur in BS and potentially overlap with fishery operations. 7 records around TAS/BS.</p>
<p>Invertebrate</p> 	<p><i>Thyone tourvillei</i></p>	<p>Sea Cucumber</p>	<p>6</p>	<p>Discard</p>	<p>Level 2 PSA Residual Risk Assessment</p>	<p>High</p>	<p>Suspension feeder Likely to live in soft sediment so habitat may overlap with fishery No information on life history Spawning 100+ eggs – non-feeding larva.</p>	<p>Uncertainty to extent of spatial overlap with fishery. 2 records around TAS/BS.</p>
<p>Invertebrate</p> 	<p><i>Neoamphicyclus mutans</i></p>	<p>Sea Cucumber</p>	<p>5</p>	<p>Discard</p>	<p>Level 2 PSA Residual Risk Assessment</p>	<p>High</p>	<p>Suspension feeder Likely to live in soft sediment so habitat may overlap with fishery. No information on life history Spawning 100+ eggs – non-feeding larva.</p>	<p>Uncertainty to extent of spatial overlap with fishery. 15 records around TAS/BS.</p>
<p>Invertebrate</p>	<p><i>Bathyplores sulcatus</i></p>	<p>Sea Cucumber</p>	<p>9</p>	<p>Discard</p>	<p>Level 2 PSA Residual Risk Assessment</p>	<p>High</p>	<p>Deep water – overlap with fishery considered unlikely. Suspension feeder, no information on life history</p>	<p>Uncertainty to extent of spatial overlap with fishery. 2 records around TAS/BS.</p>

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Invertebrate	<i>Pseudostichopus hyalegerus</i>	Sea Cucumber	8	Discard	Level 2 PSA Residual Risk Assessment	High	Continental slope – seems too deep BUT appears to have been identified as bycatch as is named by CSIRO. A deposit feeder, no information on life history. Likely to live in soft sediment so habitat may overlap with fishery Spawning 1000+ eggs – feeding larva	Modelled distribution on edge of fishery area and likely outside BS. 6 records around TAS/BS
Invertebrate 	<i>Leptosynapta dolabrifera</i>	Sea Cucumber	5	Discard	Level 2 PSA Residual Risk Assessment	High	Deposit feeder Widespread and common Likely to live in soft sediment so habitat may overlap with fishery Dioecious, likely spawns 1000++ eggs with feeding larva.	Uncertainty to extent of spatial overlap with fishery. 19 records around TAS/BS.
Invertebrate 	<i>Scoliorhapis theeli</i>	Sea Cucumber	5	Discard	Level 2 PSA Residual Risk Assessment	High	Endemic to Australia, uncommon. Detritus/deposit feeder, no information on life history.	Uncertainty to extent of spatial overlap with fishery. 4 records around TAS/BS
Invertebrate 	<i>Taeniogyrus papillis</i>	Sea Cucumber	5	Discard	Level 2 PSA Residual Risk Assessment	High	Southeast Australia. Detritus/deposit feeder. This genus includes brooders, no information on life history.	

AFMA and CSIRO have implemented new ERA methodology and ERM framework, resulting in a revised ERA methodology to enable AFMA to report on and monitor the environmental performance of its fisheries against its targets and objectives for environmental management (Fisheries Management Paper 14). The change in ERA methodology since the last assessment has resulted in a different set of high-risk species being identified, of these, *Luidia australiae* is the only species that overlaps with the previous assessment.

Following the assessment of the BSCZSF under the EPBC Act in April 2013, the Department of the Environment recommended that AFMA develop materials to enable crew to identify species classified as high risk so that catch information can be collected. The Department of Climate Change, Energy, the Environment and Water (Previously Department of Environment and Energy) extended the export approval in 2016 from five years to ten years due to the BSCZSF being assessed as posing a low environmental risk.

## 4 Monitoring programs

The monitoring program for the BSCZSF includes information collected through logbooks, catch disposal records, scientific surveys, observer coverage and independent research. An overview of the monitoring program is provided below.

### 4.1 Logbooks and catch disposal records

All BSCZSF concession holders are required to complete either paper-based logbooks or electronic logbooks (elogs) for each fishing operation. These records must capture comprehensive operational data, including vessel and operator details, gear type, fishing location, time, and catch composition.

In addition to catch data, logbooks must document:

- Bycatch species encountered,
- Interactions with ETP species,
- Observations on bottom type, scallop size, and discard rates.

This information is critical for monitoring bycatch and discarding trends, supporting sustainable fishery management, and identifying emerging ecological or operational concerns.

To complement logbook data, landed catch is reported through the SCQ02B Catch Disposal Record (CDR) or electronic CDRs (eCDRs). These records serve as a verification mechanism for logbook entries and are mandatory across all Commonwealth managed fisheries.

A review of the 2015–2017 Bycatch and Discard Workplan identified deficiencies in the consistency and accuracy of bycatch reporting within logbooks. In response, AFMA will maintain ongoing engagement with industry stakeholders to improve the quality and reliability of logbook reporting.

## 4.2 Observer program

Concession holders are required to carry an observer if requested by AFMA. Since 2013, there has been no requirement for observer coverage in the fishery due to evidence the fishery catches minimal bycatch. Although the BSCZSF has detailed data from annual biomass surveys, and a small, seasonal fishing footprint, there is a gap in bycatch information from the commercial fishery and an increasing need to demonstrate the fishery is low impact to meet requirement such as accreditation under the EPBC Act. To gather data on bycatch and discards, BSCZSF operators may be requested to carry an observer. Carrying observers assists AFMA to sustainably manage marine resources, through observing and documenting commercial fishing catches, collecting vessel technical and biological data, monitoring operations and documenting interactions with ETPs. The BSCZSF had a small level of observer coverage in 2024 with AFMA aiming for observer coverage of five percent in 2025. The cost of observer coverage will be recovered through levies to Industry. The data collected by observers will inform a decision about the ongoing need for monitoring and what that might look like.

## 4.3 Electronic monitoring

Electronic monitoring will be explored as a potential monitoring measure. This may include camera footage or still images to be able to capture the best quality to be interpreted. Observers have been asked to assess fishing operations and vessel set ups as part of an ongoing process that will include an EM trial before consideration of the need to implement a cost-effective monitoring program.

## 4.4 Fishery surveys

Since 2000, AFMA, in conjunction with Researchers have undertaken industry-based surveys of the BSCZSF. Fishery surveys indicating that the dominant bycatch species are molluscs, crustaceans, sponges and ascidians. Recent surveys are designed to monitor the condition of known beds by assessing the size structures, density, condition and distribution of the Commercial Scallop stock. The survey project involves both assessing the fishery and determining biomass estimates for Commercial Scallops in areas of the fishery.

Under the Harvest Strategy for the BSCZSF, a TAC of 150 tonnes (t) is set at the start of the season can only be increased if an independent research survey identifies a maximum of two scallop beds containing a biomass estimate of at least 1500 t. The bed/s are then closed to fishing for the season with fishing permitted throughout the remaining area of the fishery. These independent research surveys will be carried out as required.

So far there have been independent surveys undertaken every year to increase the possible TAC for the fishery with it recently averaging around 4,000 tonnes. However, it has been significantly under caught each year. The surveys also include identification and recording of any bycatch and high-risk species caught.

Annual analyses will be undertaken and reviewed to compare bycatch and benthic habitat composition each year and between survey years, allowing identification of new species in addition to changes over time and space in the longer term.

## 5 Summary

Where possible, this Bycatch and Discard Workplan describes action items which are aimed at reducing the impact to species from fishing activities, and to cost effectively collect bycatch and discard data for the BSCZSF (see summary of action items in Table 2). Some action items are designed to collect the information needed to improve data, rather than reducing the fishing impact to a species.

The categorisation of 17 high risk species is due to a lack of data. AFMA has consulted with researchers to assess the susceptibility attributes relating to spatial overlap between fishing gear/effort and species likely habitat and distribution, both from area and depth overlap perspectives. It is important that the Bycatch and Discard Workplan address not only species that have been identified via the ERA process as being at high risk, but also general bycatch reduction methods. AFMA and industry will continue to work co-operatively to reduce bycatch, minimise discarding and improve monitoring within the BSCZSF.

## 6 Review and reporting process

The Bycatch and Discard Workplan will be reviewed at:

- 12 months to ensure actions are progressing and to determine if additional actions can be taken including reviewing potential alternative measures for limiting bycatch and discards.
- 18 months to monitor the progress of action items.
- 24 months to assess the overall effectiveness of the workplan actions in addressing the associated bycatch risks and discard reduction.

At the end of the two years a new workplan will be developed and implemented in the BSCZSF.

## 7 References

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**Table 2.** Bycatch and Discard Workplan Actions

Actions	Risk / Issue to be addressed	Timeframe	Costs	Performance Indicators	Milestones
Undertake a process to review the ERA methodology in relation to the high-risk species	Appropriateness of the high-risk species as determined from the ERA	TBC (it is unclear when the review of the ERA methodology will be complete)	Staff time (includes AFMA and ScallopRAG)	Review completed Results of the review considered for the BSCZSF	AFMA and CSIRO to complete the review of ERA methodology ScallopRAG and ScallopMAC to consider the results of the review and recommend management responses
Monitor logbook data, observer data and catch disposal records to identify gaps in reporting	Inconsistency with data collection Bycatch and discards data gaps	Annually	AFMA staff time	Quality of reporting assessed	AFMA to compare logbook data, observer data and catch disposal records annually ScallopRAG and ScallopMAC consider the results of the comparison and recommend management responses AFMA to consult with operators regarding accurate recording in logbooks
Monitor interactions with high-risk and ETP species	Information on the level of interaction and impact on high-risk species and ETP species identified in the ERA process	Annually	AFMA staff time	ScallopRAG to consider interactions with high risk and ETP species annually	AFMA to review logbook data and observer reports for ETP interactions annually AFMA to report the results of the review to ScallopRAG
Consider observer and EM coverage in the BSCZSF	General bycatch and discarding information Determine fishery data needs and ensure cost effective collection of data	Ongoing monitoring program development	Staff time (includes AFMA and ScallopRAG)	Identify fishery data needs with a view to developing a monitoring plan with appropriate observer coverage	AFMA to identify fishery data needs to provide advice to ScallopRAG on observer coverage and the development of an appropriate monitoring program.