Australian Government
Australian Fisheries Management Authority

Sub-Antarctic Fisheries Bycatch Strategy 2026

Heard and McDonald Islands Fishery
Macquarie Island Toothfish Fishery

April 2026

Securing Australia's fishing future

Contents

1 Introduction

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

Under the Heard and McDonald Island Fishery Management Plan 2002 and the Macquarie Island Toothfish Fishery Management Plan 2006, AFMA is required to ensure that:

(a) the total catch of non-target species/species other than Patagonian toothfish is kept below a level that will allow stocks of the other species to be maintained at an ecologically sustainable level; and
(b) all reasonable steps are taken to minimise incidental interactions with seabirds and marine mammals; and
(c) the ecological impacts of fishing operations on habitats in the fishery area are minimised and kept below an acceptable level.

As articulated in the Commonwealth Bycatch Policy 2018 (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) 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 Commonwealth Harvest Strategy Policy) 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.

AFMA's Fisheries Management Paper 14 – AFMA's Approach to Ecological Risk Assessment and Management 2024 (FMP 14) describes requirements and objectives for managing interactions with bycatch species, including marine mammals and seabirds. This Bycatch Strategy has been developed in line with FMP 14.

This strategy should be read in conjunction with the:

- Commonwealth Fisheries Bycatch Policy 2018
- Relevant fishery management plan / arrangements
- Ecological risk Assessment / management strategies for relevant fishery
- Commonwealth Fisheries Harvest Strategy Policy and Guidelines 2018
- AFMA protected species strategy (in preparation)

2 Fishery descriptions

2.1 Heard and McDonald Islands Fishery

The Heard Island and McDonald Islands Fishery (HIMIF) lies in waters adjacent to the Heard and McDonald Islands. The Islands are Australia's most remote sovereign territory and are located on the Kerguelen Plateau in the south Indian Ocean, about 4,000 kilometres south-west of Perth. The fishery extends from 12 nautical miles offshore to the edge of the 200 nautical mile Australian Exclusive Economic Zone (EEZ) around the Islands (maps of the fishery are available on the AFMA website).

The HIMIF falls within the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) Convention area (see Figure 1), and is managed by AFMA in close cooperation with the Australian Antarctic Division (AAD) in accordance with CCAMLR Conservation Measures.

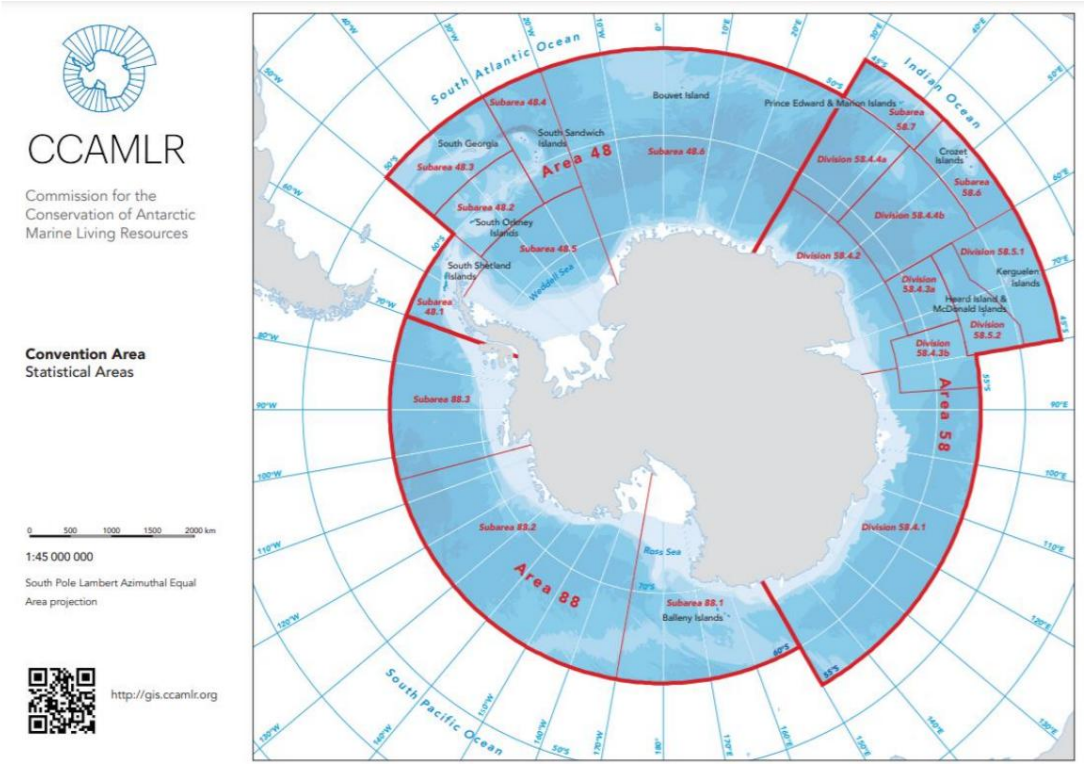

Figure 1: Location of the HIMI Fishery within the CCAMLR Convention Area

The Heard and McDonald Islands Marine Reserve is administered by AAD with much of this area closed to fishing.

Patagonian Toothfish (*Dissostichus eleginoides)* and Mackerel Icefish (*Champsocephalus gunnari*) are the target species for the HIMIF.

2.2 Macquarie Island Toothfish Fishery

The Macquarie Island Toothfish Fishery (MITF) lies in waters adjacent to Macquarie Island. Macquarie Island falls under Tasmanian jurisdiction and is located outside the Antarctic convergence, approximately 1500 kilometres south-east of Hobart.

The waters surrounding Macquarie Island out to 3 nautical miles are Tasmanian State waters and the Tasmanian Department of Natural Resources and Environment controls activities in these waters. Waters from 3 nautical miles to the 200 nautical mile outer boundary of the Australian fishing zone falls under Commonwealth jurisdiction, with fishing in these waters being managed by the AFMA under the *Fisheries Management Act 1991*. (maps of the fishery are available on the AFMA website).

State waters were closed to fishing and classified as a Nature Reserve under Tasmanian law in July 2000. Within Commonwealth waters, the Macquarie Island Marine Reserve covers 475,465 km^2 with much of this closed to fishing.

Patagonian Toothfish (*Dissostichus eleginoides*) is the target species in the MITF.

3 Workplan development

The workplan is intended to consider risks identified through the ERA process and to address impacts on the broader ecosystem, including to minimise interactions with species listed under the EPBC Act. This workplan replaces, and builds upon the progress of, the Sub-Antarctic Bycatch and Discarding Workplan 2013.

The action items at Section 6 were developed in consultation with the Sub-Antarctic Resource Assessment Group (SARAG) and Sub-Antarctic Management Advisory Committee (SouthMAC).

4 Ecological risk assessment results

The Sub-Antarctic ERAs were most recently updated for HIMIF for the period 2010/11 – 2014/15 (published February 2018) and the MITF for the period 2019–2023 (published April 2026). Both ERA reports are available on the AFMA website. No species were identified as high risk in either ERA. The proposed reassessment date for the HIMIF ERA is 2027.

5 Existing measures to mitigate risk

As evidenced by the ERA results, existing measures in the HIMIF and MITF are effective at mitigating risk. These include arrangements for bycatch species, and endangered, threatened and protected (ETP) species. Furthermore, the presence of two observers on every trip in these fisheries provides confidence in interaction reporting and the effectiveness of mitigation measures. In the HIMIF and MITF, observers collect environmental, ecological and fisheries data and undertake wildlife observations.

5.1 Bycatch species

5.1.1 Catch limits

All bycatch species in the HIMIF and MITF are subject to catch limits which AFMA monitor each year. Table 1 outlines the bycatch TAC limits for all species in both fisheries.

Table 1. bycatch TAC limits for the HIMIF and MITF

Fishery	Species	TAC (tonnes)
HIMIF	Grey rockcod (*Lepidonotothen squamifrons*)	80
	Unicorn icefish (*Channichthys rhinoceratus*)	1663
	Skates and rays (all species)	120
	Grenadiers *(Macrourus caml & M. whitsoni)*	409
	Grenadiers (*M. halotrachys* & *M. carinatus*)	360
	All other species	50
MITF	All species	50

HIMIF Catch Limits

In the HIMIF catch limits are set by AFMA for each by-catch species in line with limits determined by CCAMLR. For the major bycatch species (*Macrourus* spp. (grenadiers), Grey Rockcod (*Lepidonotothen squamifrons*) and Unicorn Icefish (*Channichthys rhinoceratus*)) species specific catch limits are set based on previous research (Nowara et. Al, 2012) and considered in stock assessments. The bycatch limits for Caml grenadier (*Macrourus caml*) and Whiton's grenadier (*M. whitsoni*) and Unicorn icefish (*Channichthys rhinoceratus*) were updated in 2015 following updated assessments. Grey rockcod was assessed in 2014 and the current bycatch limit was deemed to be precautionary. Data for most bycatch species in the HIMIF is collected through the annual Random Stratified Trawl Survey.

Catch limits are set at 50t for all other bycatch species. Operators are also subject to move-on previsions with respect to bycatch (see below).

MITF Catch Limits

In the MITF catch limits are set by AFMA at 50t for any bycatch species, in line with CCAMLR's approach and as per SARAG 45 advice.

The species level limits for were originally set in 1999 (SAFAG 5), following the CCAMLR approach of setting a 50t limit for each species where no assessment has been carried, and applying a 200t aggregate limit in addition to the individual species limits[1]. This was reviewed in 2012 with SARAG 45 recommending that it was appropriate to adopt the CCAMLR approach of setting a 50 t catch limit for each bycatch species, and there was no need to retain an overall limit of 200 t. SARAG 73 considered bycatch trend analyses conducted by CSIRO in 2025 to guide recommendations on bycatch TACS and considered that there had been no significant increase in bycatch for any species, or any trends to indicate current catch limits be amended.

[1] At the time, SAFAG were of the view that as long as there was no deliberate targeting of any one of these bycatch species the 200t limit is expected to be sustainable.

5.1.2 Move-on provisions

In the HIMIF move-on provisions apply to all fish bycatch species. These provisions prevent vessels accumulating catches of bycatch species caught as a result of aggregations of these species coinciding with commercial quantities of target species. The provision is triggered if the catch for a trawl shot or longline set exceeds between 1-5 tonnes (depending on the bycatch species taken). If triggered, vessels are required to move at least five nautical miles from the location where the bycatch exceeded the limit for a period of at least five days.

The move-on provisions apply if the bycatch, in any one haul/set, is:

- 5 tonnes or more of the species Unicorn Icefish (*Channichthys rhinoceratus*); or
- 3 tonnes or more of all Macrourus spp combined; or
- 2 tonnes or more of Grey rockcod (*Lepidonotothen squamifrons*); or
- 2 tonnes or more of Sleep shark (*Somniosus spp)*; or
- 2 tonnes or more of skates and rays; or
- 1 tonne or more of any other bycatch species

Mesh size restrictions are also in place for trawl fishing to assist escapement of juvenile target species and bycatch finfish species.

5.1.3 Modified trawl gear (Mackerel Icefish fishing at HIMI)

An industry-initiated trial to modify trawl gear under a scientific permit was initiated in November 2020. Its objectives included improving icefish catches while reducing bycatch, minimising benthic impacts, and improving operational efficiencies. The trial results indicated that the bycatch is lower in the new gear and found that skate presence was substantially lower in the new gear compared to the old gear. An amendment to the *Fisheries Management (Heard and McDonald Islands Fishery) Regulations 2002* to enable implementation of new gear requirements, and subsequent changes to SFR conditions, was made in September 2025.

5.2 Endangered, threatened and protected species

5.2.1 Marine Mammals

In both fisheries, all offal and discards must be retained and macerated on-board to reduce the risk of attracting marine mammals to the vessel during fishing operations. In the case of mammal carcasses in the event of bycatch events, these must be discharged in a manner that does not attract mammals (or seabirds) to the vessel. Interactions with these species are rare events, but should they occur Statutory Fishing Right (SFR) conditions require as much assistance as is practicable be given to mammals which are alive or injured, and that assistance is provided to observers and photographs taken if the mammal is dead. Interactions must be reported to AFMA within 72 hours of the incident in the HIMIF or 24 hours of the incident in the MITF. A prohibition on the use of plastic packaging bands, to prevent ingestion of or entanglement, by seabirds or marine mammals is also in place.

5.2.2 Skates and Rays

There are several measures specific to skates and rays in place in the HIMIF and MITF. These include conditions which facilitate skate tagging, such as the requirement to check skates for tags and retain recaptured tagged skates. Operators must assess the condition of all skates and rays to determine likely survivability and must release all skates and rays with a high probability of survival. Specific catch limits and

move-on triggers (see above) are also in place for these species. Specific handling guides, ID guides, and education materials have been developed by AFMA and CCAMLR for these species.

The 120 tonnes limit for skates and rays was set in 1997 based on a population assessment undertaken at the time for *Bathyraja* spp and has never been reached or exceeded in a given fishing season since then. A preliminary stock assessment for skates and rays has been developed by AAD (Ziegler et al., 2022; see also Table 2). This preliminary stock assessment was presented to SARAG in 2022, and further work on post-release mortality and life-history characteristics was presented to SARAG in 2023 and 2024.

Satellite tagging work has been conducted by AAD on the post-release survival of skates (*Bathyraja irassa*). Noting the small sample size (n=23), the preliminary results of this research estimate the post-release survival of *B. irrasa* caught between depths of 1200-1600 m at 26% (95% confidence interval of 13-46%). Blood samples collected from the tagged skates will also be analysed to better understand stress related effects on bycaught skates.

5.2.3 Seabirds

Most fishing effort in the MITF and HIMIF utilises demersal longlining, with trawling also permitted in the HIMIF only. A range of best practice mitigation strategies have been effectively adopted in sub-Antarctic fisheries to avoid potential interactions with seabirds.

Longline operations

For longline operations the following measures apply:

- **limited longline seasons –** in the HIMIF longline operations are limited to a 'core' season of 1 May to 14 September, with season extensions allowed from 15 to 30 April and 15 September to 31 October (where there is full compliance with CCAMLR Conservation Measures in the previous season). In the MITF longline operations are limited to a 'core' season of 15 April to 31 August, with a season extension trial for the period 1-21 September currently underway;
- **no offal discharge** - dumping of offal is prohibited outside specific identified areas (away from the main fishery footprint) and applies to all Australian vessels operating in sub-Antarctic fisheries;
- **night setting** – in the MITF line setting can only occur during the hours of darkness between the times of nautical twilight. Day setting is permitted in the HIMIF;
- **integrated weight line** – internally weighted longlines with an integrated weight of at least 50g/m.
- **paired streamer lines** – streamer lines are used to scare seabirds away from gear during line setting;
- **bird excluder device** – or 'brickle curtain' (designed and developed by Australian Longline Pty Ltd and subsequently adopted by CCAMLR) is deployed to discourage seabirds from accessing baits during line hauling;
- **prohibition on the use of plastic packaging bands** - to prevent ingestion of or entanglement in the debris by seabirds or marine mammals; and
- **minimisation of lighting** – when fishing at night, to reduce the risk of seabirds colliding with or being attracted to the boat.

If three seabirds are caught during the periods of 1 April to 30 April 2025 and 15 September to 30 November, longline fishing ceases immediately for that boat for the remainder of the season.

Trawl operations

For trawl operations the following measures apply:

- **no offal discharge** – dumping of offal is prohibited outside specific identified areas (away from the main fishery footprint)and applies to all Australian vessels operating in sub-Antarctic fisheries;
- **midwater trawl closures** – to avoid seabird interactions no midwater trawling for icefish occurs during the period 1 February to 31 March each year.
- **net cleaning** – prior to shooting, to remove material which may attract seabirds
- **prohibition on the use of plastic packaging bands** - to prevent ingestion of or entanglement in the debris by seabirds or marine mammals; and
- **minimisation of lighting** – to reduce the risk of seabirds colliding with the boat.

If three seabirds are caught and killed by mid-water trawl gear in a fishing season, the operator may only fish at night for the remainder of that season.

Seabird TAP

The incidental catch (or bycatch) of seabirds during oceanic longline fishing operations is listed under the EPBC Act as a key threatening process (since 1995). As a result, the Australian Government has in place a threat abatement plan titled Threat Abatement Plan for the incidental catch (or bycatch) of seabirds during oceanic longline fishing operations (2018) (seabird TAP).

The seabird TAP specifies a range of measures for AFMA to implement. These include: i) requiring the adoption of proven mitigation measures that ensure the performance criteria for each Commonwealth-managed longline fishery are achieved in all areas and seasons; ii) minimum independent monitoring; and iii) adaptive management if performance criteria are exceeded. The seabird TAP defines performance criteria as a maximum permissible bycatch rate at or above which a management response is required. For the HIMIF and MITF this is 0.01 seabirds per 1000 hooks set.

AFMA has in place management arrangements to implement the seabird TAP requirements (see above) and attends, presents and actively participates in the Seabird TAP Stakeholder Working Group annual meetings.

Additional MITF measures

Macquarie Island is listed as critical habitat for seabirds. As such longlining in the MITF is subject to stringent conditions, additional to the criteria and actions required in the seabird TAP, which include restriction to a core fishing season of 15 April – 31 August (to avoid breeding and migrating birds), night setting and interaction limits of one for some species.

Longlining became an approved method in the MITF following trials of the method between 2007 and 2010. The purpose of the trial was to determine whether Patagonian toothfish could be targeted by the method in the Macquarie Ridge sector of the fishery and whether the adopted mitigation strategies were effective at preventing incidental capture of seabirds. This trial included a trigger limit of 1 seabird for wandering albatross, black-browed albatross, grey headed albatross, grey petrel or soft-plumaged petrel.

These limits have been retained since the approval of longlining in the MITF. Limits apply on a per vessel basis. Therefore, if one of these species is killed as a result of an interaction with the fishing gear, the vessel is required to immediately cease fishing in the MITF for the remainder of the season. Any gear remaining in the water is allowed to be retrieved.

6 Bycatch workplan action items

The 2025 MITF ERA provided one recommendation, that recorded interactions should continue to be monitored for the Southern royal albatross and Wandering albatross. The most recent HIMIF ERA had no recommendations.

Existing measures in the HIMIF and MITF are effective at mitigating ecological risk, so the action items below have been developed to continue to mitigate and monitor ecological risk across both fisheries. Skates and rays are the subject of a range of significant ongoing work and are therefore a focus species for this workplan.

Table 2. Bycatch workplan action items

Action	Responsibility	Timing
ERA Updates		
HIMIF ERA to be updated as proposed.[2]	CSIRO	2027
AFMA and SARAG to review re-assessment triggers and indicators	AFMA, SARAG	Every 4 years since assessment • 2029 for MITF • 2032 for HIMIF[3]
Recommendation from previous ERAs (see above)		
Continue short term (annual) and long term (e.g. inter-annual, trends) monitoring of protected species interactions, including for albatross species.	AFMA, SARAG	Ongoing/continuous AFMA to continue monitoring interactions, to continue providing annual updates papers to SARAG, and consider advice as appropriate.
General Bycatch Species		
Data Collection and Improvement Ongoing data collection on bycatch species to continue to support formal stock assessments and assess risk for bycatch species. Explore additional observer training on species identification. Collect data for deep-sea biomass estimates of macrourids (outside of RSTS).	Industry, AAD, AFMA (including observer team)	Ongoing/continuous • Ongoing data collection by industry and observers • Consider observer training as needs arise
Bycatch Limits Continue short term (annual) and long term (e.g. inter-annual, trends) monitoring of bycatch species catch against limits for each fishery.	AFMA	Annually • Monitor bycatch levels against limits each season • Consider risks and advice through SARAG each year

[2] Note the MITF is not currently scheduled for reassessment, having been recently completed.

[3] Provided ERA is updated in 2027 as scheduled

Action	Responsibility	Timing
Consider the advice of SARAG on bycatch species risks and information, and make recommendations on appropriate management action as necessary.		
Bycatch trend analysis carried out for the MITF. Includes consideration of short term (annual) and long term (e.g. inter-annual) trends.	CSIRO	Annually , through SARAG
Updated assessments conducted for key bycatch species in the HIMIF.	AAD	To be updated in 2027/28 • Unicorn icefish (*Channichthys rhinoceratus*) • Grey rockcod (*Lepidonotothen squamifrons*) • Grenadiers *(Macrourus caml & M. whitsoni)* • Grenadiers (*M. halotrachys* & *M. carinatus*)
Skates and Rays		
Data Collection and Improvement Continue tagging of skates and rays, to support stock assessment and assess risk for these species. Explore options for more easily detected tag colours. Collect data for deep-sea biomass estimates of skates (outside of RSTS).	Industry, AAD, AFMA (including observer team)	Ongoing/continuous
Stock Assessment for HIMI Update to the preliminary stock assessment conducted, and presented/provided to SARAG and AFMA. Consider stock assessment results and include in consideration of bycatch TACs as appropriate.	AAD and AFMA (with the advice of SARAG and SouthMAC).	• Stock assessment to be presented in 2027, or as available • AFMA, with the advice of SARAG and SouthMAC, to consider and incorporate results in TACs as results become available.
Post release survival Additional presentation and publication to be provided to SARAG	AAD/UTAS	May 2026

7 Summary

This strategy provides an overview of the current measures and ongoing actions identified to continue to mitigate risks on specific species broader ecosystem impacts in line with management objectives of the HIMIF

and MITF. The progress against action items in this workplan will also be monitored and reported on (see Review Process below).

8 Review process

Bycatch and Discarding Workplans are largely output focused. The action items included here are only some of the measures AFMA undertakes as part of the Ecological Risk Management (ERM) Strategy and it is difficult to measure the specific contribution of an action item to the overall objectives of the ERM Strategy.

This workplan is effective as of April 2026 and will be formally reviewed in 2027 following the completion of the next HIMIF ERA. Thereafter, this Bycatch Strategy will be reviewed every 5 years, or when the ERA is updated (whichever is sooner) to:

- ensure that actions identified have progressed or been completed
- report against performance indicators
- determine actions for the next Bycatch Strategy.

9 Habitats and communities

This section outlines the key management arrangements that AFMA implements to pursue legislative and policy-based objectives relevant to the management of the HIMIF and MITF impacts upon ecological habitats and communities.

9.1 Policy background and objectives

Unlike for bycatch and commercial species, there is no specific Commonwealth policy yet that provides requirements and guidance relating to the interaction of Commonwealth fisheries with marine habitats and ecological communities. However, the FMA 1991 has relevant legislative objectives ensuring:

- the exploitation of fisheries resources and the carrying on of any related activities are conducted in a manner consistent with the principles of ESD in particular the need to have regard to the impact of fishing activities on nontarget species and the long-term sustainability of the marine environment.
- proper conservation and management measures, that the living resources of the AFZ are not endangered by over-exploitation.

In addition, the CPFB 2018 primary objective makes a clear connection between bycatch species sustainability and ecosystem function (which would encompass communities), with that objective:

- to minimise fishing-related impacts on general (not EPBC listed) bycatch species in a manner consistent with the principles ESD and with regard to the structure, productivity, function and biological diversity of the ecosystem.

CCAMLR has a specific remit to consider habitats and communities. The objective of CCAMLR is the conservation of Antarctic Marine life, as described in Article II of the CAMLR Convention, which includes the maintenance of ecological relationships and ecosystems.

9.2 Assessments

9.2.1 Heard and McDonald Island Fishery

The 2018 HIMIF ERA is the most recent assessment of the potential impact of the HIMIF upon marine habitats and ecological communities. The assessment considered that the assessment conducted by Welsford et al. (2014) was a thorough assessment of the impact of fishing on benthic habitats. For pelagic habitats and ecological communities the assessment was carried out under Level 1 of the ERAEF framework which applies a Scale-Intensity-Consequence Analysis (SICA) in relation to Habitats and Communities. That assessment determined that:

- Habitats results – benthic habitat = negligible, pelagic habitat = negligible
- Ecological Communities results – negligible, no specific issues identified.

9.2.2 Macquarie Island Toothfish Fishery

The 2025 MITF ERA is the most recent assessment of the potential impact of the MITF upon marine habitats and ecological communities. The assessment was carried out under Level 1 of the ERAEF framework which applies a Scale-Intensity-Consequence Analysis (SICA) in relation to Habitats and Communities. That assessment determined that:

- Habitats results – quantitative results not currently available for as the MITF, with techniques
- Ecological Communities results – moderate potential impact to benthic habitats exists due to the presence of weighted lines (however, line weighting protects against the greater risk to seabirds)

9.3 Management arrangements

9.3.1 Marine Reserves

Large areas of the HIMIF and MITF are covered by Commonwealth and State Marine Reserves (see section 2). These offer broad protection for habitats and communities around these islands. Further information is available at the DCCEEW and AAD websites.

9.3.2 Environmental protection obligations

Specific requirements apply to HIMIF and MITF vessels which:

- prohibit the disposal of waste overboard
- require operators to take all reasonable steps to retrieve lost gear, record the details of any lost gear, and report lost gear to AFMA
- aim to minimise the amount of plastic packaging onboard, with some specific prohibitions also in place.

10 References

Nowara, G. D. Welsford, D.C., Candy, S G., Lamb, T.D, 2012. Analysis of the by-catch of *Channichthys rhinoceratus* and *Lepidonotothen squamifrons* from the fisheries at Heard Island and the McDonald islands (58.5.2). Paper prepared for CCAMLR XXXI meeting in 2012.

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Ziegler P., Welsford D., Maschette D., Lamb T., Wotherspoon S., Cleeland J., Phillips G., Nowara G. and Dell J., Australian Antarctic Division and University of Tasmania, 2022, Science to support Australia's Southern Ocean Fisheries 2018-2020, Hobart, April 2022. CC BY 3.0

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