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**Update on the Exploratory Toothfish Fishery in the
Macquarie Ridge Continuation Research Block for 2025**

Australia



Australian Government
Department of Agriculture,
Fisheries and Forestry



Update on the Exploratory Toothfish Fishery in the Macquarie Ridge Continuation Research Block for 2025

Delegation of Australia

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Acknowledgement of Country

We acknowledge the continuous connection of First Nations Traditional Owners and Custodians to the lands, seas and waters of Australia. We recognise their care for and cultivation of Country. We pay respect to Elders past and present, and recognise their knowledge and contribution to the productivity, innovation and sustainability of Australia's agriculture, fisheries and forestry industries.

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Summary

The Australian Fishing Vessel Antarctic Discovery conducted the second year of exploratory fishing under CMM 14f-2024 in the Macquarie Ridge Continuation Research Block (MR-CRB) from 15-18 July 2025. Seven lines of approximately 5,000 hook each were set. A total of 2.5 t of Patagonian Toothfish (*Dissostichus eleginoides*) were caught, and no Antarctic toothfish (*Dissostichus mawsoni*) were caught. Ten Patagonian toothfish were tagged and released (4 tags per tonne). Otolith and length frequency data were collected. No tagged fish were caught.

With the exception of tagged toothfish, no other catch was discarded or released. The major other species caught were hake and grenadiers. There was 0.4 kg of vulnerable marine ecosystems (VME) indicator taxa caught. There were no interactions with marine mammals, marine reptiles, seabirds or other species of concern.

Fishing was conducted in full accordance with Conservation and Management Measure for Exploratory Fishing for Toothfish by Australia in the SPRFMO Convention Area (CMM 14f-2024).

1 Introduction

Australia submitted an exploratory fishing application to fish for Toothfish in an area known as the Macquarie Ridge Continuation Research Block (MR-CRB) in the South Pacific Regional Fisheries Management Organisation (SPRFMO) Convention Area, at the eleventh meeting of the SPRFMO Scientific Committee (SC11) in 2023 (SC11-DW03rev3). In 2025, fishing occurred immediately prior to the Scientific Committee (SC13) and Australia undertook to report on the results of fishing to the fourteenth meeting of the SPRFMO Scientific Committee (SC14) in 2026.

The Antarctic Discovery conducted exploratory fishing in the MR-CRB from 15-18 July 2025. Fishing occurred at the end of a fishing trip to the adjacent Macquarie Island Toothfish Fishery, within the Australian Economic Exclusive Zone (EEZ). Two observers were on board, achieving 100% observer coverage of fishing operations.

2 Data collection

Data was collected for all fishing operations as outlined in CMM 14f-2024 and Australia's exploratory fishing application (SC11-DW03_rev3). Two observers were present for the entirety of the trip. Data was collected using the same forms as the Australian commercial toothfish fishery, which are consistent with the forms used for the Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) new and exploratory fisheries.

Fishing was undertaken using the autoline method using integrated weighted line, with between 4,862 and 4,993 hooks set per shot.

Observers recorded the following details for each fishing operation

- Set number
- Date and time set start
- Date and time set finish
- Set start location (Decimal minutes)
- Set end location (Decimal minutes)
- Set start depth (m)
- Set end depth (m)
- Bait type
- Mainline length
- Number of Hooks set
- Wildlife observations
- Streamer line details
- Haul number
- Date and time haul start
- Date and time haul finish
- Haul start location (Decimal minutes)
- Haul end location (Decimal minutes)
- Haul start depth (m)
- Haul end depth (m)

- Haul interruption (hours, decimal)
- Number of hooks lost attached to line
- Number of hooks lost other
- Length of line lost.
- Wildlife observations

For each observed haul, the following catch details were recorded:

- Haul number
- Species (FAO code)
- Retained Green weight (kg)
- Retained number without tags
- Retained number with tags
- Discarded Green weight (kg)
- Discarded number
- Released alive number with tags
- Released alive number without tags
- Number lost / dropped off at the surface
- Incidental catch alive
- Incidental catch dead or injured
- Evidence of predation
- Conversion factor tests on target species
- Thaw /glaze tests
- IUU gear
- Otolith samples

For tagged fish the following details were recorded:

- Haul number
- Species (FAO code)
- Tag release location (decimal minutes)
- Person tagging (observer/crew)
- First tag number
- Second tag number
- Fish length (mm)
- Released fate (successful / not successful).

Forms to collect tag recoveries recording similar information to the above were provided to observers but not used on this trip as no tagged fish were recaptured. Vulnerable marine ecosystems (VME) data sheets consistent with CCAMLR were also provided to observers to record VME indicator taxa observed in fishing operations.

3 Results

3.1 Catch and effort

3.1.1 Toothfish

In 2025, a total of 2.54 t of toothfish was caught during fishing operations. All toothfish caught were Patagonian toothfish, with a total of 242 fish, of which 10 fish were tagged and released, and 232 was retained. Catch and effort details are included in Table 1 below.

Table 1 Summary of catch and effort details for the exploratory fishing on MR-RBC in 2024 and 2025

Year	Fishing period	Days fishing	Lines set	Mean line length (m)	Mean hooks per line	Toothfish green weight (kg)*
2024	16 -24 August	9	17	6745.6	4818	4646.6
2025	15-18 July	3	7	6886.7	4949	2541.3

MR-CRB Macquarie Ridge Continuation Research Block. * This figure does not include tagged fish.

3.1.2 Bycatch

In 2025, a total of 1482.5 kg of bycatch was caught during fishing operations. The most common bycatch species caught were blue antmore, *Antimora rostrata* (ANT) and mixed grenadiers, *Macrourid sp.* (GRV).

A complete list of bycatch species recorded by the observer is included in Table 2.

Table 2 Bycatch species, catch (kg) and number caught during the exploratory fishing on MR-CRB in 2025

Species Code	Scientific name	Catch (kg)	Number
ANT	<i>Antimora rostrata</i>	874.4	584
GRV	<i>Macrourus spp</i>	475.7	187
KCX	<i>Lithodidae</i>	0.5	1
LEV	<i>Lepidion spp</i>	131.5	13
PFR	<i>Porifera</i>	0.4	1

Note: MR-CRB Macquarie Ridge Continuation Research Block.

3.2 Biological data and analysis

In 2025, a total of 255 biological sample of catch, including toothfish and some bycatch species were collected during fishing operations.

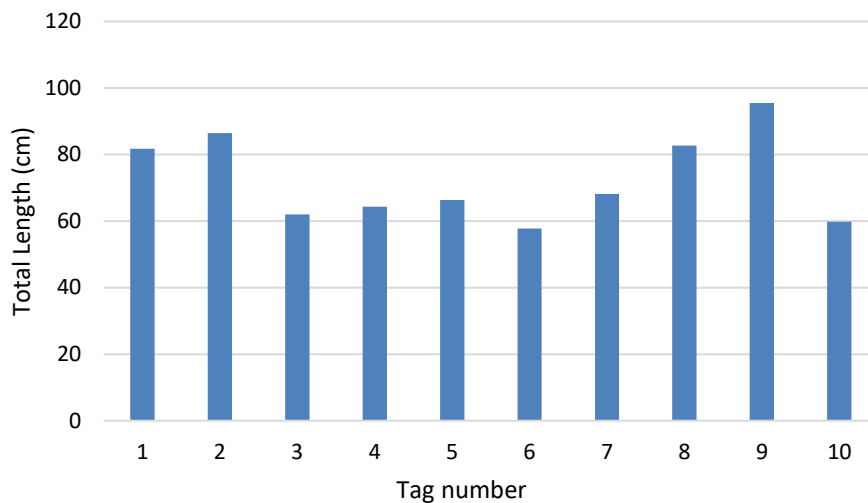
The collected biological data 2024 and 2025 for toothfish and bycatch species has not yet been analysed.

3.2.1 Tagging

In 2025, a total of 10 Patagonian toothfish were successfully tagged and released from 7 fishing operations, resulting in an overlap statistic of 75.48% being achieved for the voyage, at a rate of 4 tags per tonne. There was no tag recaptures recorded during the exploratory fishing.

The lengths of tagged fish ranged between 57.8 cm to 95.5 cm, and lengths of individual tagged fish can be seen in Figure 1.

Figure 1 Lengths of Patagonian toothfish tagged during the exploratory fishing on MR-CRB in 2025



MR-CRB Macquarie Ridge Continuation Research Block

3.3 Seabirds and Marine Mammals

The vessel used two CCAMLR compliant streamer lines during setting for the duration of the voyage, and these proved effective at deterring seabird feeding activity.

The Brickle curtain consisted of a string of purse seine floats sitting approximately 2 metres out from the vessel, suspended from two booms at deck level above the hauling window. The Brickle curtain was effective at deterring birds from accessing the line being hauled.

There were no interactions with marine mammals, marine reptiles, seabirds or other species of concern, with fishing gear during exploratory fishing in 2025.

There were 7 wildlife observations made by observers in 2025.

3.4 Benthic Habitats and VME

A total of 0.4 kg of VME indicator taxa was caught during exploratory fishing operations in 2025. These weights were accurately recorded by the observers. Only sponges (Family Porifera) were recorded. No trigger limits were reached.

Table 3 Vulnerable marine ecosystem indicator taxa recorded by observers during the exploratory fishing on MR-CRB in 2025

Set_ID	FAO code	Scientific name	Quantity estimate	Quantity unit (g)
1	PFR	<i>Porifera</i>	1	400

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3.5 Conversion factor tests

Conversion factor tests on *Dissostichus spp* were conducted once a week on a randomly selected sample of 25 fish or 200kg of fish (whichever is the greatest), per processing type, method. Due to the low number of sets in 2025, one fish was randomly selection from each haul.

Conversion factor tests were conducted on 7 Patagonian toothfish (Table 1), resulting in an observer calculated conversion factor of 1.475.

Table 4 Summary of the fish samples used in the conversion factor tests for the exploratory fishing on MR-CRB in 2025

Species Code	Processing Code	Number of individuals	Mean Green Weight (kg)	Mean Processed Weight (kg)	Cut Type
TOP	HGT	7	361.12	244.83	V cut - hand

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3.6 Otolith collection

In 2025, there were 31 Patagonian toothfish otolith pairs collected.

4 Discussion

The second year of exploratory fishing in the MR-CRB was relatively successful, although catches were lower than the previous year. Confirming that the vast majority of toothfish in this area are Patagonian toothfish is an important outcome of the first and second year of exploratory fishing. High tag rates of 4 tags per tonne in 2025 were achieved and this should help resolve questions about population size in the area and connectivity to the stock that is fished in the adjacent Australian fishery at Macquarie Island.

Further exploratory fishing is anticipated to occur in 2026, and this fishing should add to the information gained through this initial exploratory fishing.