

Mackerel Icefish (2016)

Champscephalus gunnari



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STOCK STATUS OVERVIEW

Jurisdiction	Stock	Fisheries	Stock status	Indicators
Commonwealth	Heard Island and McDonald Islands	HIMIF	Sustainable	Spawning stock biomass

HIMIF Heard Island and McDonald Island Fishery (CTH)

STOCK STRUCTURE

Genetic studies have concluded that Mackerel Icefish at Heard Island and the McDonald Islands constitute a single biological stock, which shows differences from icefish populations in the Atlantic and on the neighbouring Kerguelen Plateau[1,2].

Here, assessment of stock status is presented at the biological stock level—Heard Island and McDonald Islands.

STOCK STATUS

Heard Island and McDonald Islands

The Heard Island and McDonald Islands Fishery (Commonwealth) (HIMIF) falls within the Convention Area of the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR). This intergovernmental organisation was established to conserve and manage the Southern Ocean Antarctic ecosystem. CCAMLR employs precautionary harvest strategies that consider the role of target species within the larger ecosystem. For Mackerel Icefish, the CCAMLR harvest strategy, which includes decision rules to set the catch limit, requires that the spawning stock biomass must be maintained at 75 per cent of the level that would occur in the absence of fishing at the end of a two-year model projection.

The Mackerel Icefish assessment in 2015 for the HIMIF used an abundance index from a random stratified trawl survey[3]. Given the high interannual variability in the population abundance of this species, CCAMLR does not use an estimate of unfished biomass; the TAC is set to allow a harvest of only 25 per cent of the current biomass over a two-year period. The most recent

assessment estimates the 2015 biomass of Mackerel Icefish to be 5123 tonnes (t)[4]. Using the CCAMLR harvest strategy decision rules, the yield for the 2015–16 fishing season was calculated to be 482 t, which it is estimated will ensure maintenance of a spawning stock biomass of at least 75 per cent of unfished biomass over the two-year projection period[4]. The stock is not considered to be recruitment overfished. This TAC was endorsed by CCAMLR after review[5,6]. []This level of fishing mortality is unlikely to cause the stock to become recruitment overfished[7].

On the basis of the evidence provided above, the Heard Island and McDonald Islands biological stock is classified as a **sustainable stock**.

BIOLOGY

Mackerel Icefish biology[2]

Species	Longevity / Maximum Size	Maturity (50 per cent)
Mackerel Icefish	4+ years; ~450 mm <u>TL</u>	2 years; 240–260 mm <u>TL</u>

DISTRIBUTION



Distribution of reported commercial catch of Mackerel Icefish

TABLES

Commercial Catch Methods	Commonwealth
Otter Trawl	✓
Fishing methods	Commonwealth

Commercial	
Otter Trawl	✓

Management Methods	
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	Commonwealth
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Commercial	
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Area restrictions	✓
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Catch limits	✓
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Individual transferable quota	✓
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Active Vessels	
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	Commonwealth
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	1 Vessel in HIMIF,
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HIMIF Heard Island and McDonald Island Fishery(CTH)

Catch	
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	Commonwealth
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Commercial	10t in HIMIF,
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Indigenous	None
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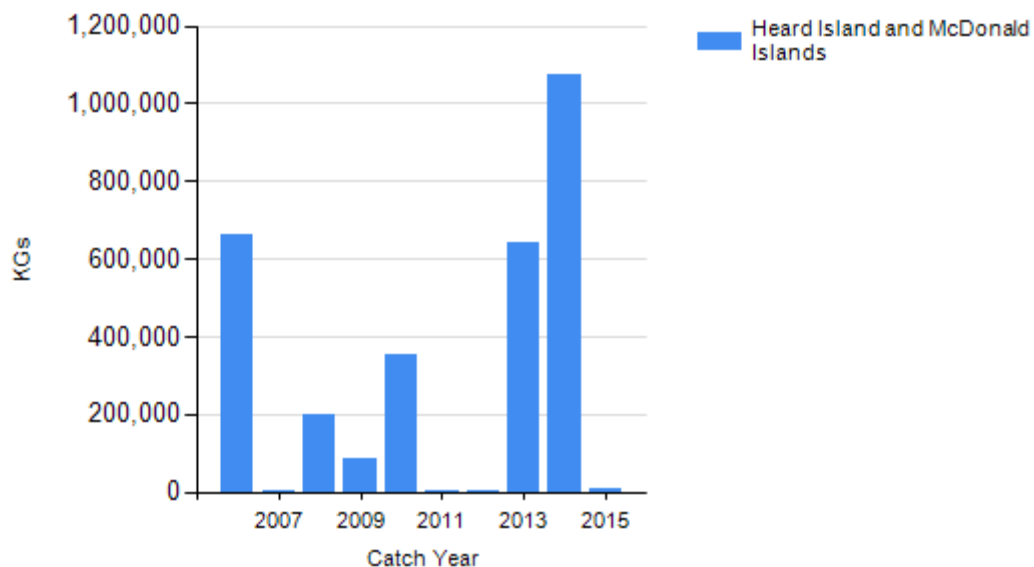
Recreational	None
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HIMIF Heard Island and McDonald Island Fishery (CTH),

a Commonwealth – Recreational The Australian Government does not manage recreational fishing in Commonwealth waters. Recreational fishing in Commonwealth waters is managed by the state or territory immediately adjacent to those waters, under its management regulations.

b Commonwealth – Recreational There is no recreational or Indigenous fishing for Mackerel Icefish.
c Commonwealth – Indigenous The Australian Government does not manage non-commercial Indigenous fishing in Commonwealth waters, with the exception of the Torres Strait. In general, non-commercial Indigenous fishing in Commonwealth waters is managed by the state or territory immediately adjacent to those waters.

CATCH CHART



Commercial catch of Mackerel Icefish - note confidential catch not shown

EFFECTS OF FISHING ON THE MARINE ENVIRONMENT

- Three ecological risk assessments (by gear type, including demersal trawl, midwater trawl and demersal longline) for non-target species in the Heard Island and McDonald Islands Fishery (Commonwealth) (HIMIF) found that the risk to the sustainability of non-target species was low, and no species was determined to be at high risk[8].
- Australia implements regulations, in line with those of Commission for the Conservation of Antarctic Marine Living Resources, to minimise the environmental impact of fisheries in the HIMIF[9]. These include bycatch mitigation measures such as weighted longlines and bird scaring lines; specific reporting requirements for seabird or marine mammal interactions; bycatch catch limits; bycatch and offal discharge restrictions; closed areas; and a requirement to carry two scientific observers.

ENVIRONMENTAL EFFECTS on Mackerel Icefish

- Increasing sea surface temperatures could impact Mackerel Icefish around subAntarctic islands where their distribution is limited. Mackerel Icefish lack haemoglobin[10,11] in their blood and rely on highly oxygenated, cold water.

References	
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