

# Mackerel Icefish (2018)

*Champsoscephalus gunnari*



**Heather Patterson:** Australian Bureau of Agricultural and Resource Economics and Sciences

## 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 [Williams et al. 1994, Williams et al. 2001].

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 2017 for the HIMIF used an abundance

index from a random stratified trawl survey [Nowara et al. 2017]. Given the high interannual variability in the population abundance of this species, CCAMLR does not use an estimate of unfished biomass; the total allowable catch (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 2017 biomass of Mackerel Icefish to be 3 901 tonnes (t) [Maschette et al. 2017]. Using the CCAMLR harvest strategy decision rules, the recommended TAC for the 2017–18 fishing season was calculated to be 526 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 [Maschette et al. 2017]. The stock is not considered to be recruitment impaired. This TAC was endorsed by CCAMLR after review [CCAMLR 2017a, CCAMLR 2017b]. This level of fishing mortality is unlikely to cause the stock to become recruitment impaired [Patterson et al. 2018].

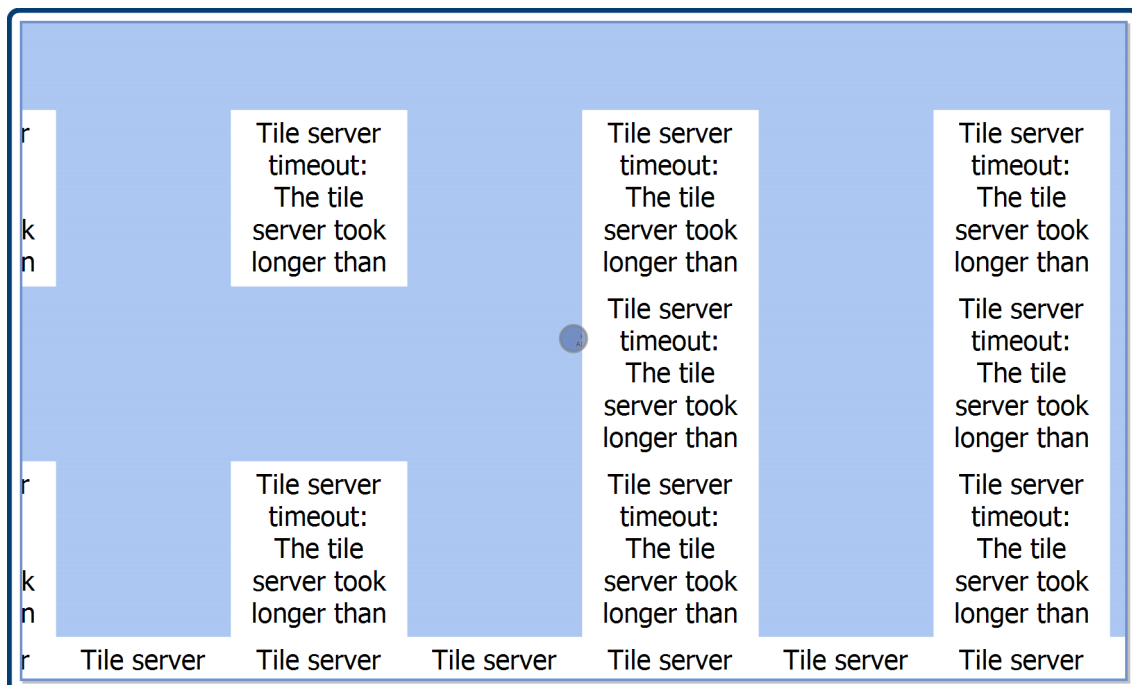
On the basis of the evidence provided above, the Heard Island and McDonald Islands biological stock is classified as a **sustainable stock**.

## BIOLOGY

**Mackerel Icefish biology** [Williams et al. 2001]

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

## DISTRIBUTION



Distribution of reported commercial catch of Mackerel Icefish

## TABLES

STATUS OF AUSTRALIAN FISH STOCKS REPORT  
Mackerel Icefish (2018)

Commercial Catch Methods	Commonwealth
Midwater Trawl	✓
Otter Trawl	✓

Fishing methods	Commonwealth
Commercial	
Otter Trawl	✓

Management Methods	Commonwealth
Commercial	
Area restrictions	✓
Catch limits	✓
Individual transferable quota	✓

Active Vessels

Catch	Commonwealth
Commercial	557t in HIMIF,
Indigenous	None
Recreational	None

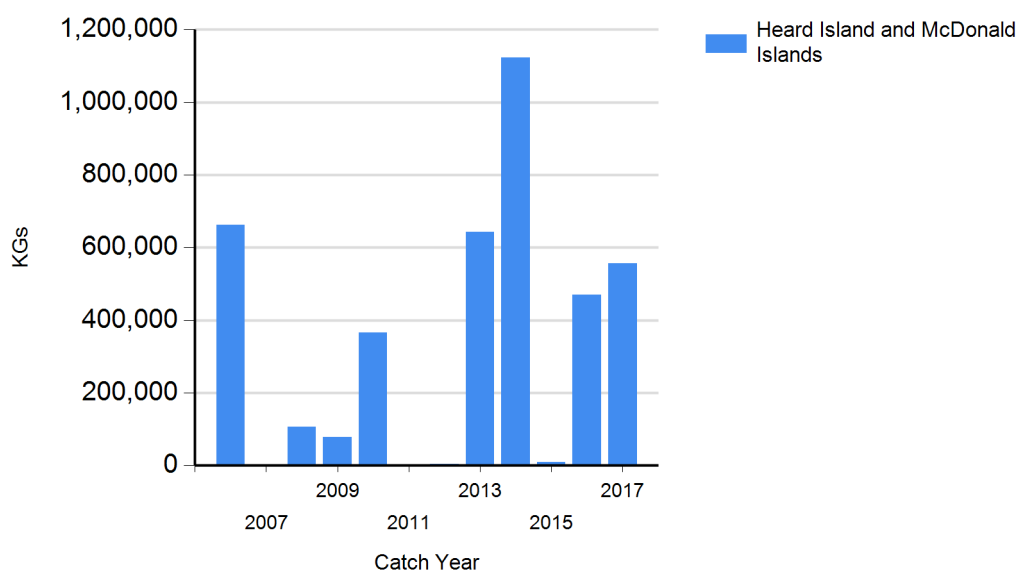
HIMIF Heard Island and McDonald Island Fishery (CTH),

**Commonwealth – Recreational** (a) 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; and (b) There is no recreational or Indigenous fishing for Mackerel Icefish.

**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

STATUS OF AUSTRALIAN FISH STOCKS REPORT  
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Commercial catch of Mackerel Icefish

**EFFECTS OF FISHING ON THE MARINE ENVIRONMENT**

**ENVIRONMENTAL EFFECTS on Mackerel Icefish**

<b>References</b>	
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