

Mackerel Icefish (2023)

Champscephalus gunnari



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STOCK STATUS OVERVIEW

| Jurisdiction | Stock | Stock status | Indicators |
|--------------|-----------------------------------|--------------|---|
| Commonwealth | Heard Island and McDonald Islands | Sustainable | Spawning stock biomass, projected biomass |

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 international 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% 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 2021 for the HIMIF used an abundance index from a random stratified trawl survey [Miller et al. 2021]. Given the high

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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% of the current biomass over a two-year period. The assessment estimated the 2021 biomass of Mackerel Icefish to be 11,692 tonnes (t) [Maschette et al. 2021]. Using the CCAMLR harvest strategy decision rules, the recommended TAC for the 2021–22 fishing season was calculated to be 1,528 t, which was estimated to ensure the maintenance of a spawning stock biomass of at least 75% of unfished biomass over the two-year projection period [Maschette et al. 2021]. This TAC was endorsed by CCAMLR after review [CCAMLR 2021a; CCAMLR 2021b] and was set by the Australian Fisheries Management Authority as the TAC for the 2021–22 fishing season. The TAC in the 2020–21 season was 406 t, with a catch of 406 t [Patterson and Tuynman 2022]. The above evidence indicates that the biomass of the stock is unlikely to be depleted and recruitment is unlikely to be impaired. The current level of fishing mortality is unlikely to cause the stock to become recruitment impaired.

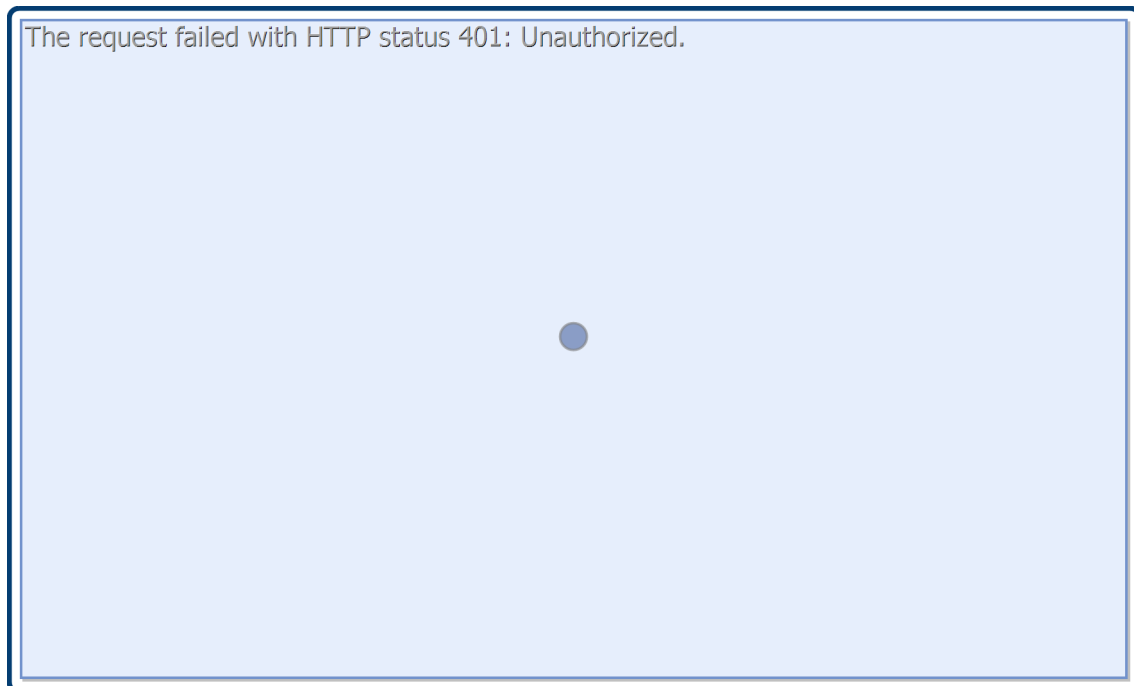
On the basis of the evidence provided above, the Heard Island and McDonald Islands biological stock is classified as a **sustainable stock**.

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

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| Fishing methods | |
|-------------------|--------------|
| | Commonwealth |
| Commercial | |
| Demersal Longline | ✓ |
| Otter Trawl | ✓ |

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

| Catch | |
|-------------------|--------------|
| | Commonwealth |
| Commercial | 1020.87 t |

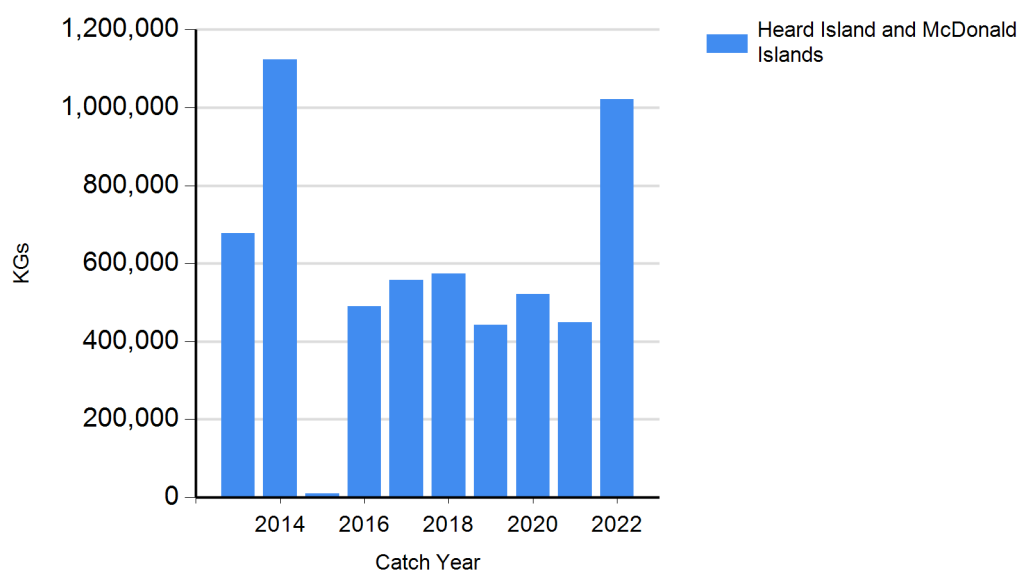
Commonwealth – Commercial (Catch). The most recent data available for the Heard Island and McDonalds Islands Fishery (HIMIF) are for the 2021–22 fishing season.

Commonwealth – Recreational. There is no recreational fishing for Mackerel Icefish. 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.

Commonwealth – Indigenous. There is no Indigenous fishing for Mackerel Icefish. 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

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Commercial catch of Mackerel Icefish

| References | |
|----------------------------|--|
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| CCAMLR 2021a | Commission for the Conservation of Antarctic Marine Living Resources 2021a, Report of the Working Group on Fish Stock Assessment, WG-FSA-21, CCAMLR Working Group on Fish Stock Assessment, Hobart, 13–20 September 2021. |
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